



**TeemTalk**  
**-05W, -07W & -11W**  
**User's Guide**



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# 1

## *Introduction*

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**This chapter introduces TeemTalk terminal emulation software for Microsoft Windows and the contents of this User's Guide.**

### ***What Is TeemTalk?***

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TeemTalk for Windows provides precise emulation of a wide range of industry standard text and graphics terminals on any PC running Microsoft Windows. Multiple concurrent sessions with different hosts can be conducted over serial RS232 lines or local area networks (LANs) including DECnet, TCP/IP and Novell.

TeemTalk incorporates an impressive range of additional features formulated to increase productivity and reduce network loading. These include file transfer, session capture and replay, dynamic data exchange, a toolbar, hotspots, soft buttons, keyboard mapping, mouse button definition, connection templates, customising capabilities, a comprehensive script language, and an optional Application Programming Interface (API).

## **About This User's Guide**

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This User's Guide describes how to use TeemTalk-05W, TeemTalk-07W and TeemTalk-11W version 4.3.1 for Windows 3.1x, 95 and NT. The information contained in the following chapters applies equally to TeemTalk-05W, TeemTalk-07W and TeemTalk-11W unless indicated otherwise.

The illustrations in this User's Guide that show the TeemTalk window or dialog boxes are shown in the Windows NT style. The layout for Windows 3.1 and 95 will be very similar, but if there are significant differences then these will be illustrated accordingly.

If you require information on network protocols and facilities, refer to the TeemTalk for Windows Networking Guide.

**Chapter 1: Introduction**

Introduces TeemTalk for Windows and the contents of this User's Guide.

**Chapter 2: Getting Started**

Describes how to use TeemTalk and configure it for compatibility with your hardware and the application.

**Chapter 3: Keyboard Configuration**

Describes how to configure TeemTalk for your particular keyboard, remap key functions and compose special characters.

**Chapter 4: Mouse Functions**

Describes the special functions assigned to the mouse buttons by TeemTalk and how to redefine the buttons.

**Chapter 5: The Toolbar**

Describes how to use the toolbar and redefine the buttons.

**Chapter 6: Hotspots**

Describes the hotspot facility which enables functions to be performed by clicking on keywords displayed on the screen.

**Chapter 7: Setup Menus**

Describes all the commands and setup dialog boxes that can be accessed via drop-down menus in the menu bar.

**Chapter 8: File Transfer**

Describes how to transfer files using the Kermit, XMODEM, XMODEM-1K, YMODEM Batch, ZMODEM and ASCII protocols.

*Chapter 9: **ICL FTF File Transfer***

Describes the ICL FTF file transfer utility supported by TeemTalk for Windows 3.1x in all terminal emulation modes.

*Chapter 10: **FTP File Transfer***

Describes the FTP interface for file transfer across Windows Sockets based networks.

*Chapter 11: **Initialization Commands***

Describes commands that can be included in the initialization file and on the command line to specify the loading configuration for TeemTalk.

*Chapter 12: **Creating A Script File***

Describes how to create a script file to automate certain activities such as logging onto remote computers.

*Chapter 13: **Dynamic Data Exchange***

Describes the support of dynamic data exchange (DDE) by TeemTalk.

*Appendix A: **Troubleshooting***

Provides answers to the most commonly asked questions.

*Appendix B: **Virtual Key Names***

Lists all the virtual key names that enable you to include a specific key function in a user definition for key macros, soft buttons, hotspots, etc.

*Appendix C: **Key Reference Numbers***

Lists all the valid key reference numbers used for key programming in Tek Primary Setup and host commands, and the script language PSET and PGET commands.

*Appendix D: **Character Sets***

Shows the character set code tables supported by TeemTalk.

*Appendix E: **Host Command Summary***

Lists the host commands that are supported in each terminal emulation mode.

## Terms & Conventions

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This User's Guide uses the following terms and conventions.

1. References to TeemTalk in the main text of this User's Guide apply equally to TeemTalk-05W, TeemTalk-07W and TeemTalk-11W for Windows 3.1x, 95 and NT unless indicated otherwise.
2. Some sections of this User's Guide assume you are using TeemTalk-07W or TeemTalk-07W32 when describing various procedures. References to **TT07W** in filenames and commands apply to TeemTalk-07W and TeemTalk-07W32 and, unless indicated otherwise, should be substituted with **TT05W** if you are using TeemTalk-05W or TeemTalk-05W32, or **TT11W** if you are using TeemTalk-11W or TeemTalk-11W32.
3. An asterisk in a filename or directory name must be substituted with the number indicating the version of your TeemTalk software unless specified otherwise. For example, **07** for TeemTalk-07W.
4. When references to keys are shown linked by a + (plus sign), this means that two or more keys have to be pressed at the same time. For example, 'press **Ctrl + M**' means press and hold down the **Ctrl** key, press the **M** key then release both keys.
5. 'Click' means position the mouse pointer over an element on the display then quickly press and release the specified mouse button.
6. 'Double click' means position the mouse pointer over an element on the display then quickly press and release the specified mouse button twice in quick succession.
7. 'Drag the pointer' means hold down the left mouse button (or button assigned with the select function) and slide the mouse so that a selection box is displayed.

# 2

## Getting Started

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This chapter describes how to run TeemTalk and configure it for compatibility with your hardware and the application.

### Running TeemTalk

---

To run TeemTalk, display the TeemTalk group window (or the window you specified when installing the software) and select the icon shown below.



**Mouse:** Double-click the **TT05W**, **TT07W** or **TT11W** icon.

**Keyboard:** Press **Ctrl + Tab** until the icon is selected then press **Return**.

The screen will display a copyright message then the TeemTalk window (shown overleaf) in which the DEC VT100 emulation is running by default.

### Quitting TeemTalk

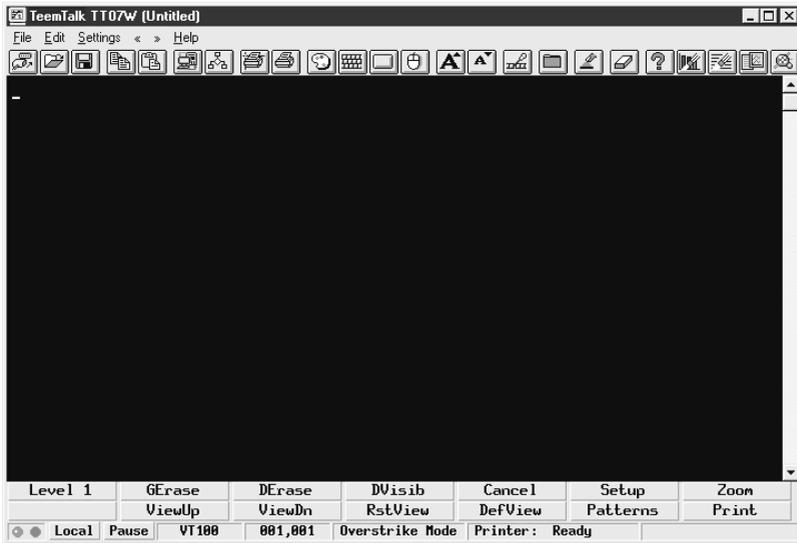
---

You can quit an instance of TeemTalk in one of two ways, from the **File** menu when the window is displayed, or the **Control** menu when the window is displayed or iconized.

#### Quitting using the File menu:

**Mouse:** Click on **File** in the menu bar to display the **File** menu, then click the **Exit** option.

**Keyboard:** Press **Alt + F** to display the **File** menu, then press **X** to exit.



### Quitting using the Control menu:

**Mouse:** If the window is displayed, click the box or icon in the top left corner of the window to display the Control menu, then click the **Close** option.

If the window is iconized, click the icon to display the Control menu then click the **Close** option.

**Keyboard:** If the window is displayed, press **Alt + Spacebar** to display the Control menu. Press the down arrow key until the highlight rests over **Close** then press **Return**.

If the window is iconized, press **Alt + Esc** until the icon title is highlighted then **Alt + Spacebar** to display the Control menu. Press the down arrow key until the highlight rests over **Close** then press **Return**.

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## Host Communications

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### Creating A Communications Session

When TeemTalk is loaded for the first time, a dialog box will be displayed which enables you to configure TeemTalk for a serial or network host connection.



*Note: If you do not wish to make a host connection at this moment, just click the **Cancel** button to close the dialog box. You can display the **New Connection** dialog box again later by clicking **File** in the menu bar and selecting **New Connection...** in the menu.*

The **Type** option specifies whether a serial or network connection is to be made. Clicking the arrow button will display a drop-down list box containing all the possible settings.

The **Services** option specifies the port or network host node which TeemTalk is to communicate with. This is a text box with an associated drop-down list box. You can either make a selection from the list box or enter a valid host name or internet address in the text box.

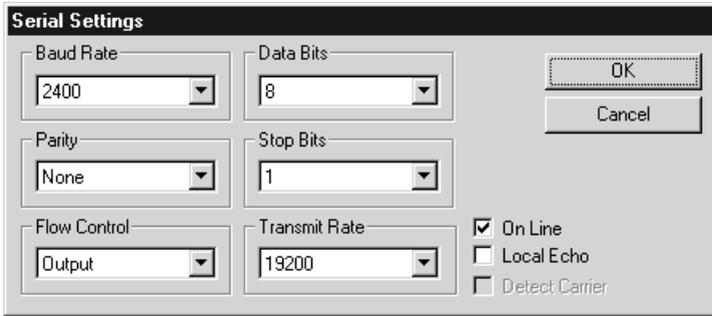
*Note: If you are unfamiliar with using dialog boxes and setup menus, refer to the beginning of the Setup Menus chapter.*

### Making A Serial Host Connection

To connect to a serial host, select **Serial** in the **Type** list box (default), then select the **Com** port required in the **Services** list box.

Click the **Configure...** button to display the **Serial Settings** dialog box (shown overleaf) and make sure the settings match that of the host.

Click **OK** to return to the **New Connection** dialog box then click the **Connect** button.



*Note: The options in this dialog box are described in the Serial Settings section in the Setup Menus chapter and only apply when the connection type is set to **Serial**.*

The status bar along the bottom of the TeemTalk window displays two LEDs. The first LED indicates whether or not you are connected to the host. It will show red when not connected and green when you are connected. The second LED indicates whether or not data is being sent to or from the host. It will show dull green when there is no activity, red when data is being sent to the host, and bright green when data is being received from the host.

## Making A Network Host Connection

To connect to a network host, select the protocol required in the **Type** list box:

TeemTalk for Windows 95 and NT:

|                |                      |                              |
|----------------|----------------------|------------------------------|
| <b>TCP/IP</b>  | <b>CTERM</b>         | <b>WinSock 2</b>             |
| <b>NetBIOS</b> | <b>MultiLan</b>      | <b>ISDN</b>                  |
| <b>LAT</b>     | <b>Microsoft SNA</b> | <b>TeemTalk-OSI (option)</b> |

TeemTalk for Windows 3.1x:

|                    |                     |                        |                    |
|--------------------|---------------------|------------------------|--------------------|
| <b>LAT</b>         | <b>NetBIOS</b>      | <b>B and W. TCP</b>    | <b>INFOConnect</b> |
| <b>FTP PC/TCP</b>  | <b>OSLAN</b>        | <b>WinSock</b>         | <b>ISDN</b>        |
| <b>Sun PC/NFS</b>  | <b>TELAPI</b>       | <b>Ext. NCSI</b>       | <b>DOSLANTI</b>    |
| <b>LAN W/Place</b> | <b>BAPI</b>         | <b>Eicon X25</b>       | <b>MultiLan</b>    |
| <b>NetManage</b>   | <b>Interrupt 14</b> | <b>IPX/SPX</b>         |                    |
| <b>PathWay</b>     | <b>INT6B / NASI</b> | <b>NetWare for LAT</b> |                    |
| <b>CTERM</b>       | <b>LanManager</b>   | <b>TeemTalk-OSI</b>    |                    |

*Note: Refer to the Network Connection chapter in the Networking Guide for a description of each protocol supported and for any additional configuration required prior to making a connection.*

The **Services** list box (in the **New Connection** dialog box) will display the devices on the network which use the currently selected protocol. Click the name of the device required or, in the case of **TELAPI**, enter an Internet address in the text box (for example, **128.127.126.2**). Note that either the host name or IP address may be entered for TCP/IP connections. When **Eicon X25** is selected, TeemTalk requires you to enter a valid X25 address as none will be listed.

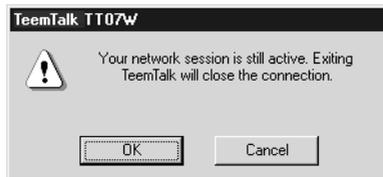
The **Telnet Options** button becomes available when a Telnet protocol is selected in the **Type** list box. The dialog box displayed when this button is clicked is described in the *Setup Menus* chapter.

Clicking the **Connect** button or the name of the host in the **Services** list box twice will cause TeemTalk to attempt to connect to the specified host. If a connection cannot be made because the network driver is not installed or the host node name is invalid, an error message will indicate this. Failure to connect for any other reason will result in a **Connection Failed** message.

The status bar along the bottom of the TeemTalk window displays two LEDs. The first LED indicates whether or not you are connected to the host. It will show red when not connected and green when you are connected. The second LED indicates whether or not data is being sent to or from the host. It will show dull green when there is no activity, red when data is being sent to the host, and bright green when data is being received from the host.

Connection to the network host node will close if you change the settings in the **New Connection** dialog box and attempt to connect, if you log out of the host, or the host closes the connection. When the host closes the connection a message box will be displayed giving you the option of reconnecting to the network host node, cancelling the message box and returning to TeemTalk, or exiting TeemTalk.

A warning message will be displayed if you attempt to open a new session while a session is already open. If you attempt to exit TeemTalk while a network session is still active, the following message box will be displayed:



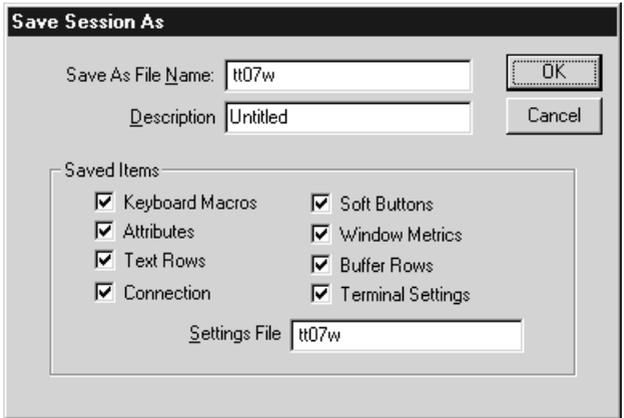
Any of these message boxes can be disabled so that the current connection is automatically closed when the host closes the connection, a new session is opened, or TeemTalk is exited. Refer to the *Initialization Commands* chapter for details.

## Creating A Connection Template

You can save the current session configuration as a connection template. To make TeemTalk automatically attempt to make a host connection using the same settings the next time it is loaded, click the **File** option in the menu bar to display the **File** menu, then click the **Save Session** option.

TeemTalk enables you to create multiple connection templates, any one of which can be used either when TeemTalk is loaded or while it is running. The procedure is as follows:

1. In the **File** menu, select the **Save Session As...** option to display a dialog box.



2. In the **Saved Items** box, indicate which user preference settings are to be saved by checking the boxes next to the relevant options.
3. In the **Settings File** text box, specify the name of the terminal emulation settings file (and the directory path if different from the default) which is to store settings only affecting the terminal emulation. The default filename is **tt\*w.nv** where **\*** is **05**, **07** or **11**, depending on your version of TeemTalk.
4. In the **Save As File Name** text box, specify the name of the workspace settings file (and the directory path if different from the default) which is to store the user preference settings selected by the **Saved Items** options. The default filename is **tt\*w.wsp** where **\*** is **05**, **07** or **11**, depending on your version of TeemTalk.

*Note: Splitting the saved settings into two files enables users to share a common terminal emulation settings file while allowing each user to have their own workspace settings file.*

5. In the **Description** text box, enter a unique description (up to 132 characters long) which will be used to identify the connection template for future selection. This description will also appear in the **Open Session** dialog box.
6. Click the **OK** button to save the template settings. If you specified the names of settings files that already exist, a message box will ask you to confirm whether or not you want to overwrite the existing files with the new settings.

## Using Environment Variables To Locate Settings Files

When TeemTalk for Windows 95 or NT is installed on a terminal server, environment variables may be used to locate settings files on the client PC. This means that each client may use a different setup configuration, reading and saving settings locally, instead of changing files stored on the server which would affect all clients.

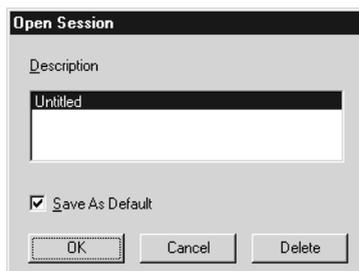
Each client must use the same user environment variable name to specify the directory path for the TeemTalk settings file(s). This name is then specified in the registry on the terminal server, enclosed by % (percentage) characters.

For example, each client has the user environment variable USERPROFILE pointing to a local directory (which may be different on each client). To make the directory specified by USERPROFILE the location of the TeemTalk settings files (**.nv** and **.wsp**), the TeemTalk registry entries on the terminal server would look like this:

```
NvPath: "%USERPROFILE%"  
WsPath: "%USERPROFILE%"
```

## Selecting A Connection Template

The **Open Session** option in the **File** menu displays a dialog box that enables you to select a connection template for TeemTalk to use.



The **Description** list box displays the one-line descriptions of connection templates that were created using the **Save Session As** dialog box. The description of the

connection template currently in use is highlighted. The factory default connection template is **Untitled**. Clicking one of the descriptions then the **OK** button will cause TeemTalk to use the connection template associated with the chosen description.

You can make TeemTalk automatically use a particular connection template when it is loaded or reset by clicking the required description, checking the **Save As Default** check box, then clicking the **OK** button. To delete a connection template, select the description then click the **Delete** button.

You can also use the following command line option to override the default connection template used when TeemTalk is loaded:

`-se"description"`

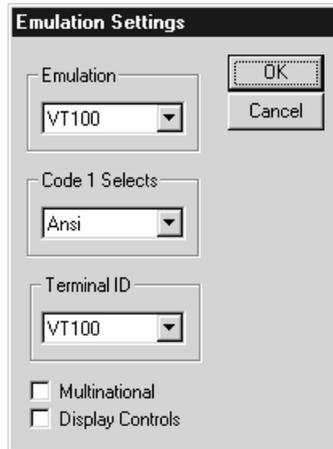
where *description* must exactly match the description assigned to a connection template already saved using the **Save Session As** dialog box. The description must be enclosed by double-quotes.

---

## Selecting The Terminal Emulation

---

When you load TeemTalk for the first time, the DEC VT100 emulation will be running by default. All the terminal emulations supported by TeemTalk can be accessed from the **Emulation Settings** dialog box. This is displayed by selecting **Settings** in the menu bar then **Emulation...** The emulations available are listed in the **Emulation** list box.



To change the current emulation mode, select the emulation required then click the **OK** button. The emulation setting may be saved so that TeemTalk will automatically run it when it is loaded or reset by selecting the **Save Session** option in the **File** menu.

A brief description of the emulation options follows.

**VT52** and **VT100** modes enable you to run applications written for the DEC VT52 and VT100 terminals, respectively.

**Tek** mode provides compatibility with software designed to drive the Tektronix 4100 or 4200 series terminals. Emulation of the Tektronix 4014 terminal can be achieved by selecting this option and setting the **Dialog Area Enabled** option in the **Dialog Settings** dialog box to **0**.

**Edit** mode provides compatibility with software designed to drive the DEC VT100 terminal. In this mode the following features are set to pre-determined conditions:

- A. The dialog area is enabled and visible.
- B. The dialog area buffer and scrolling region are set to 24 lines.
- C. Cursor origin mode is set to Absolute (refer to the description of the **Cursor Origin** option in the **Dialog Settings** dialog box).

- D. Insert/Replace character mode is set to Replace.
- E. Keys **PF1** through **PF4** generate ANSI cursor movement sequences.
- F. All programmed strings for keys are temporarily disabled.

**VT220-7** and **VT220-8** modes are emulations of the DEC VT220 terminal, the difference is in their treatment of 8-bit control codes. When **VT220-7** is selected, all 8-bit codes are converted to their 7-bit equivalents, whereas **VT220-8** leaves 8-bit codes unchanged. If you are using VT200 applications, select **VT220-7**.

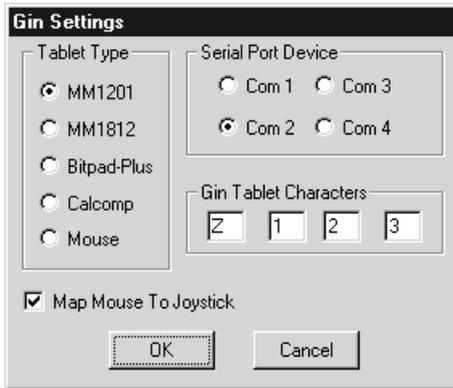
**W3220** mode provides compatibility with software designed to drive the Westward 3220 terminal.

---

## Tablet & Mouse Configuration

---

If you are using a tablet or mouse, you must specify the type of device and the port to which it is connected before TeemTalk will recognize it. To do this, display the **Gin Settings** dialog box by selecting **Gin...** in the **Settings** menu.



The **Tablet Type** option specifies the graphics input (GIN) device that is attached to your system and the data format that TeemTalk uses to communicate with it.

TeemTalk incorporates several tablet drivers. The following list includes the baud rate, data bits, stop bits and parity settings that are automatically set for the tablet type selected.

|               |   |
|---------------|---|
| <b>MM1201</b> | Summagraphics MM1201<br>(9600, 8, 1, Odd) |
| <b>MM1812</b> | Summagraphics MM1812<br>(9600, 8, 1, Odd) |

|                    |  |
|--------------------|--|
| <b>Bitpad-Plus</b> | Summagraphics Bitpad-Plus<br>(9600, 7, 1, Even)  |
| <b>Calcomp</b>     | Calcomp (16 button)<br>(9600, 7, 1, Even)  |
| <b>Mouse</b>       | Mouse<br>(Uses the communication settings specified<br>in the <b>Serial Settings</b> dialog box) |

Click the button next to the **Tablet Type** required then specify the **Serial Port Device** to which the Gin device is attached. You can save these settings so that TeemTalk will automatically assert them when loaded or reset by clicking the **Save Session** option in the **File** menu.

Refer to the *Setup Menus* chapter for a complete description of the **Gin Settings** dialog box.

---

## ***Primary Setup Mode***

---

TeemTalk can be configured for your hardware and application either by using setup dialog boxes displayed from the **Settings** menu in the menu bar, or by specifying settings in the Tektronix form of setup called Primary Setup.

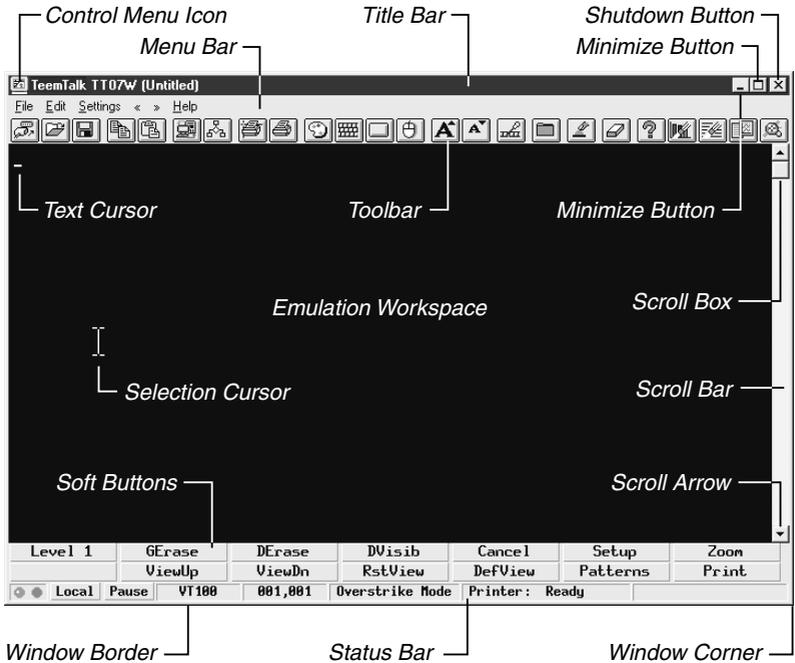
The easiest way to configure TeemTalk is by using the various dialog boxes displayed from the **Settings** menu. Some of these are discussed in this chapter and all of them are described in detail in the *Setup Menus* chapter.

Primary Setup mode is used by those who have experience in programming. No menus are displayed and the only indication that you are in Primary Setup mode is an asterisk (\*) character displayed in the first column. Primary Setup mode is toggled on and off either by clicking the **Setup** button at the bottom of the TeemTalk window or by pressing the keys **Alt + Z** together. Configuration is achieved by entering a command at the asterisk prompt followed by one or more values. The valid commands that can be entered are listed in the *Command Summary* appendix alongside the equivalent host commands.

You can display the current setup configuration by entering **STAT** (short for status) at the asterisk prompt and hitting **Return**. Changes made to the Primary Setup configuration are automatically reflected in the **Settings** dialog boxes and vice versa.

# The TeemTalk Display

The TeemTalk window incorporates several special facilities in addition to the standard facilities supported by Microsoft Windows. The illustration below shows the various elements of the window which are described in the following sections.



## The Title Bar

The title bar displays the name of your version of TeemTalk software (title), the name of the session currently running (subtitle) in brackets, and an indication of the current host connection (host name, IP address or COM port). You may specify a different title or subtitle on the command line for loading TeemTalk or in the initialization file. Refer to the *Initialization Commands* chapter for details.

## The Minimize & Maximize Buttons

These buttons are used by the mouse to shrink the window to an icon or increase the window to the maximum size possible while still displaying the number of lines and columns specified in setup, the default setting being 80 columns by 32 lines. (The equivalent keyboard functions are enabled via the Control menu).

*Note: The number of lines and columns displayed is affected by the setting of the **Resize Font, Rows and Columns** options in the **Dialog Settings** dialog box. Refer to the **Setup Menus** chapter for details.*

Once the window has been iconized, it can be restored to its original state by double-clicking the icon.

When the window has been maximized, the maximize button changes to show an up and down arrow. Clicking the button now will restore the window to its previous size.

*Note: You can cause the window to be minimized, maximized or fill the display area when TeemTalk is first started by using an initialization file command or command line option. Refer to the **Initialization Commands** chapter for details.*

## The Menu Bar

The menu bar provides access to a series of commands and dialog boxes which enable you to perform various functions and configure TeemTalk for compatibility with the application.

One of four menus may be displayed at any one time. These are headed **File**, **Edit**, **Settings** and **Help**.

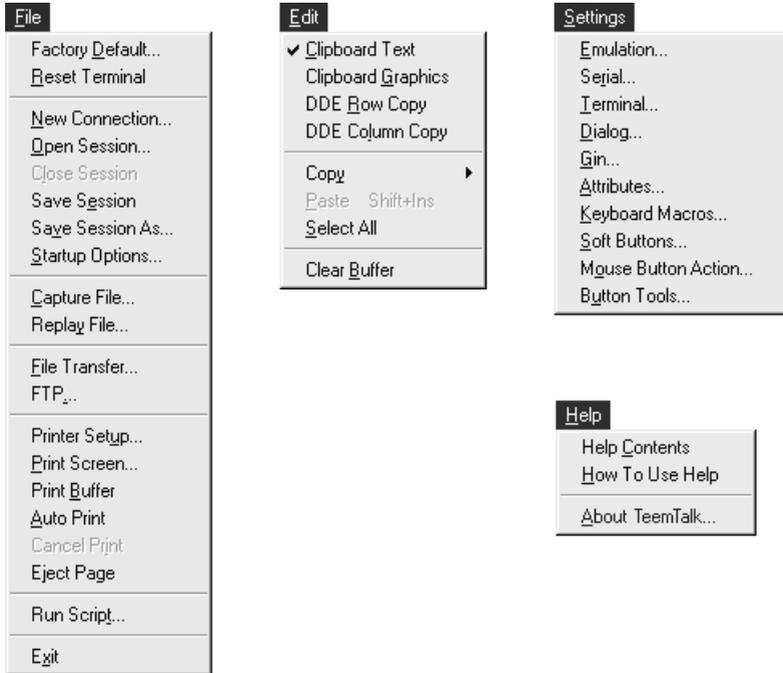
### To display a menu:

**Mouse:** Click the title of the menu required.

**Keyboard:** Hold down the **Alt** key and press the key bearing the underlined character in the menu title. For example, pressing **Alt + F** will display the **File** menu.

When the menu bar is not displayed you can still display the menus by pressing the following keys:

|                |                              |
|----------------|------------------------------|
| <b>Alt + F</b> | for the <b>File</b> menu     |
| <b>Alt + E</b> | for the <b>Edit</b> menu     |
| <b>Alt + S</b> | for the <b>Settings</b> menu |
| <b>Alt + H</b> | for the <b>Help</b> menu     |



When you display a menu and move the cursor over the menu options, the status bar at the bottom of the window will change to display a brief description of the option at the cursor position.

Refer to the *Setup Menus* chapter for a complete discussion on selecting and using the options in these menus.

### **To close a menu:**

**Mouse:** Click anywhere outside the menu.

**Keyboard:** Press the **Alt** key.

## Resizing The Window

The menu bar also includes two commands for resizing the window.

The << and >> commands enable you to decrease or increase the size of the window to the size of the next smallest or largest font supported while retaining the same number of lines and columns.

## To resize the window:

**Mouse:** Click the pointer over the << or >> commands.

**Keyboard:** Hold down the **Alt** key and press the key bearing the underscored character in one of the menu titles, for example, **Alt + F**. Press the right arrow key to move the highlight over << or >> and press **Return**.

## The Toolbar

The toolbar and associated floating button palette provide a quick way of actioning commands or displaying setup dialog boxes by just clicking a button. TeamTalk displays a toolbar below the menu bar by default.



The toolbar contains a series of buttons with graphical representations of their functions. These buttons are predefined with functions found in the setup menus. You can redefine all the buttons and add or remove buttons from the toolbar via the **Button Tools** dialog box. Refer to the chapter entitled *The Toolbar* for a complete description.

The toolbar can be pulled away from the menu bar and floated on the display by positioning the mouse pointer anywhere in the toolbar except on a button, holding down the left mouse button then dragging the pointer down until the toolbar outline changes shape. Releasing the mouse button will display the floating button palette.



The floating button palette contains the same buttons as the toolbar. You can move and resize the palette in the same way as any other window. To convert the floating button palette back into the toolbar, click the control menu box at the top left corner of the palette window and select **Attach**. If you click the shutdown button on the floating button palette, you can restore display of the tool buttons by selecting the **Button Tools** option in the **Settings** menu and checking the **Visible** option in the dialog box.

## The Scroll Bar

The scroll bar enables you to display alphanumeric data that is above or below the view of the dialog area. The dialog area is a 'window' into the dialog buffer which is used to store alphanumeric data. The dialog area may fill the entire emulation workspace or consist of only two lines. The scroll bar represents the entire buffer.

You can specify the size of the dialog buffer and the number of lines actually displayed (the dialog area) in the **Dialog Settings** dialog box, as described in the *Setup Menus* chapter. The total number of dialog buffer lines may not exceed 100.

A mouse is required to enable scrolling as keyboard commands for moving through the buffer are not supported. The scroll bar includes up and down **scroll arrow** buttons and a **scroll box** to enable you to scroll through the buffer.

The **scroll arrow** buttons allow you to scroll up or down a line at a time or several lines at a time when clicked, depending on the setting of the **Burst Scroll** option in the **Dialog Settings** dialog box. Holding down the mouse button while a scroll arrow is selected will enable continuous scrolling.

The **scroll box** allows you to quickly move through the buffer when it is dragged up or down the scroll bar by placing the pointer over it, holding down the left mouse button then moving the mouse.

Clicking the pointer in the scroll bar above or below the scroll box will cause the previous or next block of data to be displayed. (A block is equal to the number of lines and columns displayed in the window.)

## The Soft Buttons

|         |         |         |         |         |          |       |
|---------|---------|---------|---------|---------|----------|-------|
| Level 1 | GEraser | DEraser | DVisib  | Cancel  | Setup    | Zoon  |
|         | ViewUp  | ViewDn  | RstView | DefView | Patterns | Print |

A set of soft buttons is displayed at the bottom of the TeemTalk window by default. These can be programmed so that they perform various functions when clicked.

There are four soft button levels. Level 1 is displayed by default. Each level consists of twelve programmable buttons, providing a combined total of 48 programmable buttons. You can display all four levels at the same time if required. All levels are accessible even if not all are displayed, levels stored off-screen can be 'scrolled' into view by clicking the **Level** button. You can specify how many levels of soft buttons are actually displayed by using an initialization file command or command line option.

The soft buttons are programmed using the **Soft Buttons** dialog box, which is displayed by selecting **Settings** in the menu bar then **Soft Buttons...** Refer to the *Setup Menus* chapter for information on programming the buttons.

The soft buttons can be removed from the display by unchecking the **Visible** check box in the **Soft Buttons** dialog box.

The soft buttons can be detached as a separate window by deselecting the **Attached** option in the **Soft Buttons** dialog box.

| Soft Buttons - TeemTalk TT07W (Untitled) |        |        |         |         |          |       |
|--|--------|--------|---------|---------|----------|-------|
| Level 1                                  | GErase | DErase | DVisib  | Cancel  | Setup    | Zoom  |
|  | ViewUp | ViewDn | RstView | DefView | Patterns | Print |

If you close the **Soft Buttons** window, you can display it again by selecting the **Soft Buttons** option in the **Settings** menu, checking the **Visible** check box, then clicking **OK**.

The current position and size of the **Soft Buttons** window can be saved so that it is displayed the same way the next time TeemTalk is loaded. To do this, select the **Save Session As** option in the **File** menu, make sure the **Soft Buttons** option is checked in the resulting dialog box, then click **OK**.

By default, the buttons displayed on level 1 are predefined with functions supported by the Tektronix 4105 or 4207 and 4111 terminals as follows:

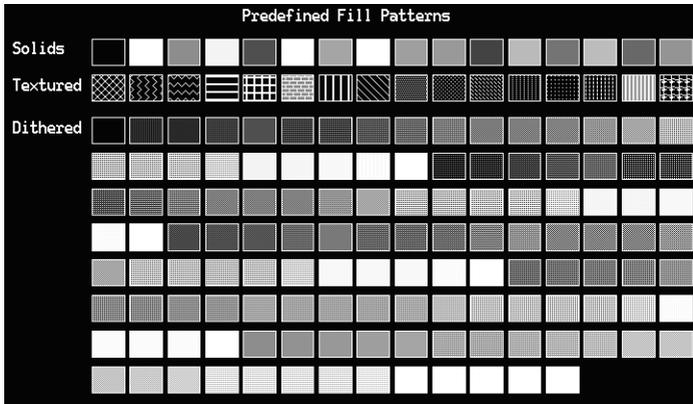
- GErase** This will erase the contents of the graphics area and redraw all visible segments.
- DErase** This will erase all the text contained in the dialog area buffer.
- DVisib** This will toggle the visibility of the dialog area on and off.
- Cancel** This will halt terminal activity by resetting bypass, Gin, marker, prompt, snoopy, and vector modes.
- Setup** This will toggle the Tektronix form of setup called Primary Setup on and off. An asterisk prompt indicates that you are in Primary Setup mode. (Primary Setup can also be toggled on and off by pressing the keys **Alt + Z** together.) Refer to the *Primary Setup Mode* section earlier in this chapter for more details.
- Zoom** (Not supported by TeemTalk-05W.) This will activate the zoom/pan feature. When the pointer is moved into the emulation workspace it will change into the zoom cursor, which appears as a two-way arrow. Click the left mouse button to select that location as the centre of the area to be zoomed. Moving the cursor now will cause two rectangles to appear. The larger one represents what will be the edge of the window. Clicking the middle mouse button (or holding down the **Shift** key while clicking either the left or right button on a two-button mouse) will cause the contents of this rectangle to be redrawn to fill the window.

If the left mouse button is clicked when the zoom cursor is displayed but no zoom rectangles, an overview of the entire 4096x4096 display memory will be displayed.

The zoom function can be exited without changing the window contents by clicking the right mouse button.

After an increase or decrease in zoom, the view of the image prior to the last redraw can be restored by clicking the **RstView** button. Up to four views can be stored; clicking **RstView** repeatedly will recall these views in sequence.

- ViewUp** (Not supported by TeemTalk-05W.) This will save the state of the current view then make the next higher numbered view the current view.
- ViewDn** (Not supported by TeemTalk-05W.) This will save the state of the current view then make the next lower numbered view the current view.
- RstView** (Not supported by TeemTalk-05W.) This will display the last four views when clicked repeatedly.
- DefView** (Not supported by TeemTalk-05W.) This will display the default view.
- Patterns** This will display all the predefined fill patterns that can be selected by the Tek Primary Setup **FILLPATTERN** command to fill polygons.



There are three types of fill pattern: solid, textured and dithered. A fill pattern is selected by specifying the number of the pattern required after the **FILLPATTERN** command in Primary Setup. Fill patterns are numbered as follows:

Solid fill patterns are numbered **0** to **-15**, left to right.

Textured fill patterns are numbered **1** to **16**, left to right.

Dithered fill patterns are numbered **50** to **174**, left to right, top to bottom, as follows:

|                                |                                 |
|--------------------------------|---------------------------------|
| Row 1: <b>50</b> to <b>65</b>  | Row 5: <b>115</b> to <b>129</b> |
| Row 2: <b>66</b> to <b>81</b>  | Row 6: <b>130</b> to <b>145</b> |
| Row 3: <b>82</b> to <b>97</b>  | Row 7: <b>146</b> to <b>161</b> |
| Row 4: <b>98</b> to <b>114</b> | Row 8: <b>162</b> to <b>174</b> |

**Print** This will display a dialog box which enables you to produce a hardcopy of data displayed on the screen in a specified format. Refer to the description of the **File** menu **Print Screen** option in the *Setup Menus* chapter for more information.

## The Status Bar

The status bar consists of several fields and buttons which show the status of various operations and enable you to switch between modes.



**Field 1:** This displays two LEDs. The first LED indicates whether or not you are connected to the host. It will show red when not connected and green when you are connected. The second LED indicates whether or not data is being sent to or from the host. It will show dull green when there is no activity, red when data is being sent to the host, and bright green when data is being received from the host.

**Button 1:** This enables you to switch between **Local** and **Online** mode. The label indicates the mode TeemTalk will switch to if the button is clicked.

**Button 2:** This enables you to **Pause** or **Resume** scrolling data in the window. The label indicates the action that will be taken if the button is clicked.

**Field 2:** Indicates the current terminal emulation.

**Field 3:** This displays the **line,column** location of the text cursor.

**Field 4:** This indicates whether **Overstrike Mode** or **Insert Mode** is currently selected. In **Overstrike Mode** (default), new characters will replace already existing characters at the cursor position. When **Insert Mode** is selected, new characters will be inserted at the cursor position without deleting existing characters, which will move to the right.

Field 5: Indicates the status of the printer as follows:

**None** signifies that the printer is not turned on or not connected, or not installed in Microsoft Windows.

**Not Ready** signifies that the printer is not ready to receive data for printing.

**Ready** signifies that the printer is ready to receive data for printing.

**Auto** signifies that the emulation is in Auto Print mode in which the current cursor line is sent to the printer when a command for the cursor to move to the next line is issued.

**Controller** signifies that the emulation is in Printer Controller mode in which the host has direct control over the printer. Print screen commands issued from the keyboard or mouse will be ignored.

Field 6: This is not used in the current version of TeemTalk.

## The Window Border & Corners

The window border and corners can be selected and moved to resize the window. The effect of resizing the window is determined by the **Resize Font** and **Rows** options in the **Dialog Settings** dialog box.

When **Resize Font** is selected (default), resizing the window will cause TeemTalk to search a list of known fonts and select the one that allows the same number of rows and columns (80 or 132) to fill the new window size. The window will be adjusted to display all the rows and columns.

When **Resize Font** is not selected, resizing the window will have no effect on the font size and the number of displayed rows will be increased or decreased according to the new window size.

### To resize the window using the border:

**Mouse:** Place the pointer over the border at the edge or corner to be moved, hold down the left mouse button and drag the mouse.

**Keyboard:** Press **Alt + Spacebar** to display the Control menu then **S** to select **Size**. Press the relevant arrow key once to move the four-headed arrow to the border edge and, if a corner, press the arrow key in the direction of the corner. Pressing the arrow keys will now resize the window until **Return** is pressed to display the new window size.

## The Emulation Workspace

The emulation workspace is the area which emulates the display of the terminal specified in setup (the VT100 terminal by default) and where work is carried out with an application. Refer to the section entitled *Selecting The Terminal Emulation* earlier in this chapter for details on how to change the emulation.

In Tek mode, the emulation workspace effectively consists of two layers, one lying on top of the other. One layer, referred to as the dialog area, is used to display alphanumeric text. The other layer is used to display graphics and graphics text, and is called the graphics area.

The dialog area is a 'window' into the dialog buffer which is used to store alphanumeric text. The dialog area may fill the entire emulation workspace or consist of only two lines. You can specify the size of the dialog buffer and the number of lines actually displayed in the **Dialog Settings** dialog box, as described in the *Setup Menus* chapter.

When the dialog area is disabled within Tek mode, all incoming alphanumeric text is directed to the graphics area, providing an emulation of the Tektronix 4014 terminal which does not support a separate dialog area. In any other terminal emulation mode, the dialog area is always enabled (there is no separate graphics layer) and all alphanumeric text is directed to it.

You can toggle the visibility of the dialog area on and off by clicking the **DVisib** soft button in the **Soft Buttons** window. The contents of the dialog buffer can be erased by clicking the **DErase** button, and you can erase the contents of the graphics area and cause all visible segments to be redrawn by clicking the **GErase** button.

## Default Font Sizes

The size of the font used by default when TeemTalk is loaded usually depends on the type of display adaptor in your system. However, you can specify a different default font size using the initialization file command **defaultFontIndex=#** or **-df#** command line option, where **#** is the index of the font as defined in the following table.

The size of the font for a particular index will vary depending on the terminal emulation. Specifying an index outside the range for the emulation will cause the highest valid index number for that emulation to be used. The font sizes are defined in pixels.

| Font Index | DEC VT Modes |          | Tek 4205 & 4207 |          | Tek 4111 |
|------------|--------------|----------|-----------------|----------|----------|
|            | 80 Cols      | 132 Cols | 80 Cols         | 132 Cols | 128 Cols |
| 0          | 24 x 12      | 24 x 7   | 23 x 12         | 23 x 7   | 16 x 8   |
| 1          | 19 x 10      | 19 x 6   | 21 x 11         | 21 x 6   | 14 x 7   |
| 2          | 18 x 9       | 18 x 5   | 19 x 10         | 19 x 6   | 12 x 6   |
| 3          | 17 x 8       | 17 x 4   | 17 x 9          | 17 x 5   | 10 x 5   |
| 4          | 16 x 8       | 16 x 4   | 15 x 8          | 15 x 4   | 8 x 4    |
| 5          | 15 x 8       | 15 x 4   | 13 x 7          | 13 x 4   | 7 x 3    |
| 6          | 14 x 7       | 14 x 4   | 12 x 7          | 12 x 4   | 7 x 3    |
| 7          | 13 x 6       | 13 x 3   | 12 x 6          | 12 x 3   | 7 x 3    |
| 8          | 12 x 5       | 12 x 3   | 11 x 6          | 11 x 3   | 7 x 3    |
| 9          | 10 x 5       | 10 x 3   | 9 x 5           | 9 x 3    | 7 x 3    |
| 10         | 8 x 5        | 8 x 3    | 7 x 4           | 7 x 2    | 7 x 3    |
| 11         | 7 x 5        | 7 x 3    | 6 x 3           | 6 x 2    | 7 x 3    |

## The Text Cursor

The text cursor is a flashing block or underline character which indicates the position at which the next displayable character received from the host or entered by the keyboard will be displayed. The type of text cursor displayed can be selected by the **Cursor Style** option in the **Dialog Settings** dialog box. Refer to the *Setup Menus* chapter for details.

## The Selection Cursor

The selection cursor is a vertical bar which is displayed when the mouse pointer is moved into the emulation workspace. It is controlled by the mouse and is used to select text for editing.

To select text, position the selection cursor next to the first character position to be selected, hold down the left mouse button then move the cursor to the end of the selection. Moving the cursor above or below the boundary of the emulation workspace while the left mouse button is held down will cause the display to scroll enabling selection of text stored in display memory. The text will be highlighted when selected. You can use the copy and paste commands in the **Edit** menu on selected text as described in the *Setup Menus* chapter.

When the selection cursor is moved outside the emulation workspace, or when menus or dialog boxes are displayed, it changes back to the mouse pointer, enabling you to select window elements.

## The Gin Cursor

The Gin (Graphics Input) cursor is a small crosshair cursor which is used to make selections and specify locations in the graphics area. The Gin cursor can be steered using the mouse or cursor keys. You can change the size of the cursor by using the following initialization file command or command line option, where *size* is a numeric value in the range **1** to **4096** (i.e. world coordinates):

Initialization file command: **CrosshairSize=***size*  
Command line option: **-x***size*

*Notes*

# 3

## Keyboard Configuration

---

**This chapter describes how to configure TeemTalk for your particular keyboard, remap key functions and compose special characters.**

### Introduction

---

TeemTalk maps the keyboard to be as near as possible to the terminal being emulated. The illustrations on the following pages show how the 83/84 key AT, 101/102 key Enhanced AT and DEC LK250/450 keyboard layouts are mapped in DEC VT100, VT220, Edit and Tek modes. The mapping for other layouts can be displayed by using the **Show Map** option in the **Keyboard Macros** dialog box as described later in the *Remapping The Keyboard* section. You can remap the keyboard as required and functions that may not be represented on the keyboard can be assigned to specific keys.

TeemTalk for Windows 3.1x supports the Digital LK250 and LK450 keyboards, and the KEA Systems PowerStation keyboard. If a driver for one of these is loaded, TeemTalk scans the **SYSTEM.INI** file to see if the string "LK250", "LK450" or "PowerStation" is present and maps the keyboard accordingly.

TeemTalk for Windows 95 or NT will interrogate the system registry to see if LK450 drivers are installed. If LK450 drivers are installed then the keyboard will be mapped accordingly.

*Note: When running TeemTalk with the LK250 or LK450 keyboard, it is imperative that the LED on the keyboard labelled **SPECIAL** or **DEC** is not on. This can be toggled on and off by pressing the keys **Alt + F17** together.*

## AT Keyboard Layout DEC VT220 Mode Mapping

|        |          |          |           |       |
|--------|----------|----------|-----------|-------|
| ESC    | NUM LOCK | NUM LOCK | SCRL LOCK | BREAK |
| FIND   | ←        | PREV     | ↑         |       |
| SELECT | HOME     | →        | NEXT      |       |
|        | INSERT   |          |           |       |

|     |     |       |     |
|-----|-----|-------|-----|
| PF1 | PF2 | PF3   | PF4 |
| 7   | 8 9 | —     |     |
| 4   | 5 6 | ,     |     |
| 1   | 2 3 | ENTER |     |
|     | 0   | .     |     |

|           |           |
|-----------|-----------|
| Shift DO  | Shift F17 |
| Shift F18 | Shift F19 |
| Shift F20 |           |
|           |           |

|     |     |
|-----|-----|
| DO  | F17 |
| F18 | F19 |
| F20 |     |
|     |     |

|           |            |
|-----------|------------|
| Shift F6  | Shift F7   |
| Shift F8  | Shift F9   |
| Shift F10 | Shift F11  |
| Shift F12 | Shift F13  |
| Shift F14 | Shift HELP |

|     |      |
|-----|------|
| F6  | F7   |
| F8  | F9   |
| F10 | F11  |
| F12 | F13  |
| F14 | HELP |

With Alt

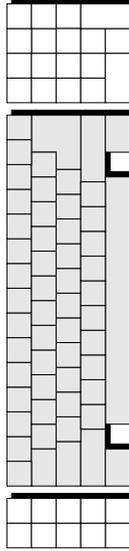
Normal

Ctrl + Shift

With Ctrl

With Shift

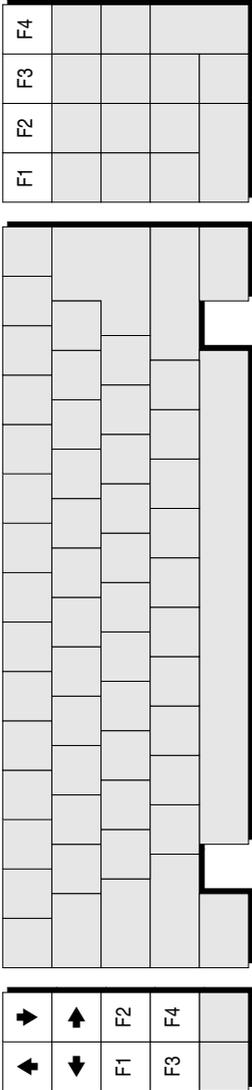
Normal



The cursor keys will function without **Alt** when Num Lock is OFF.

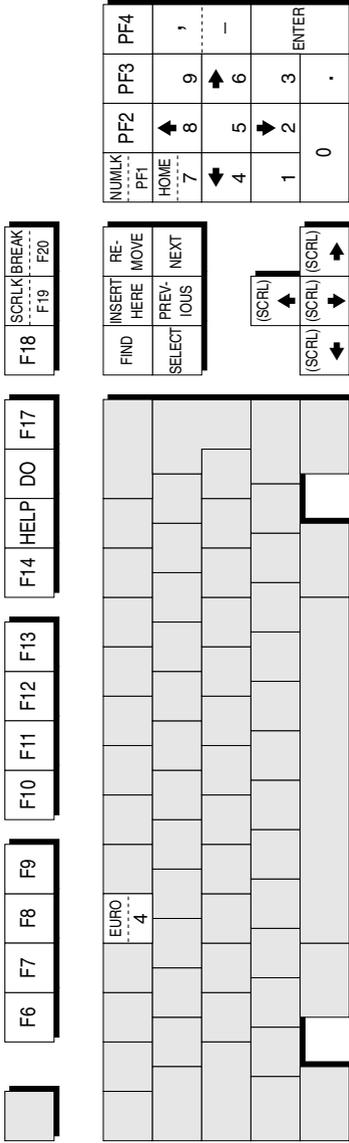
All unmarked keys function as indicated by the legends on the keycaps.

### AT Keyboard Layout Tek, VT100 & Edit Mode Mapping



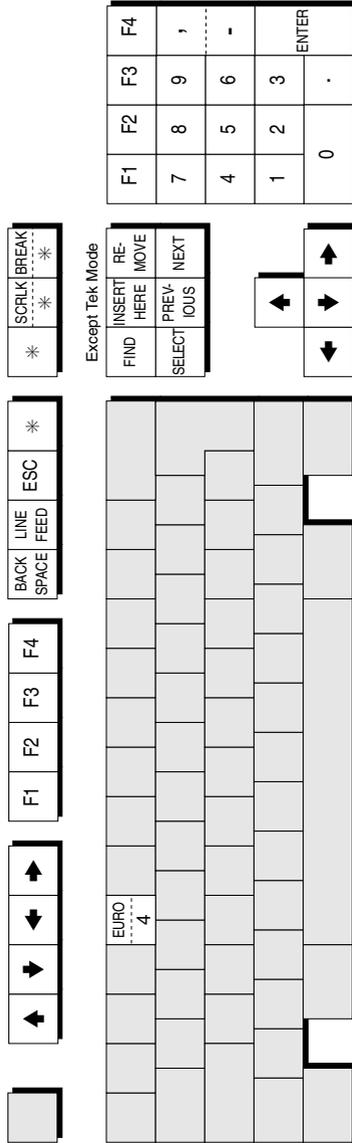
All unmarked keys function as indicated by the legends on the keycaps.

## Enhanced AT Keyboard Layout DEC VT220 Mode Mapping



**Alt key usage:** [NUMLK] PF1  
**Normal key usage:** [PF1]  
 All unmarked keys function as indicated by the legends on the keycaps.  
 Bracketed functions are generated when used in conjunction with **Control**.

## Enhanced AT Keyboard Layout Tek, VT100 & Edit Mode Mapping

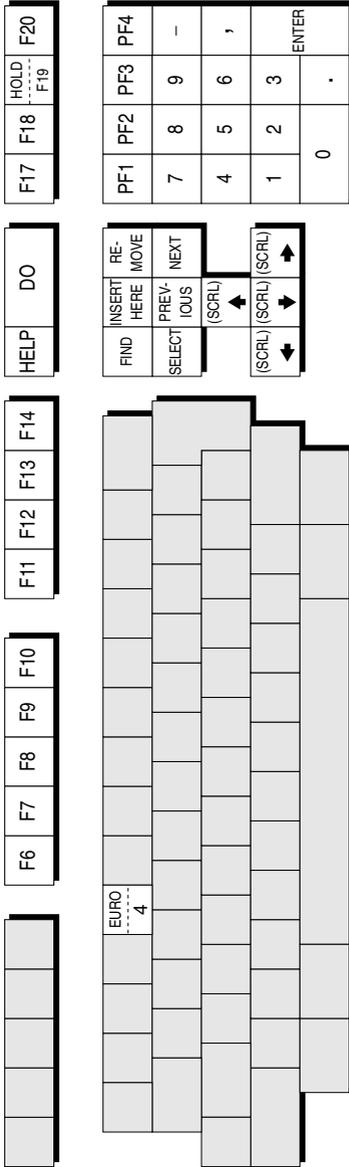


**Alt key usage:** Keys marked \* have no function.

**Normal key usage:** All unmarked keys function as indicated by the legends on the keycaps.

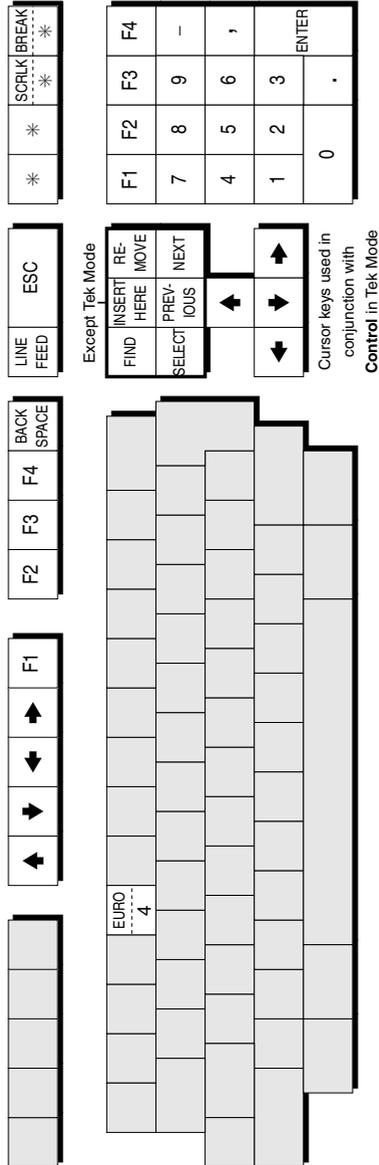
Keys marked \* have no function.  
All unmarked keys function as indicated by the legends on the keycaps.

## DEC LK250/450 Keyboard Layout DEC VT220 Mode Mapping



**Alt** key usage:  All unmarked keys function as indicated by the legends on the keycaps.  
 Normal key usage:  Bracketed functions are generated when used in conjunction with **Control**.

## DEC LK250/450 Keyboard Layout Tek, VT100 & Edit Mode Mapping



## DEC LK250 Keyboard Drivers

---

TeemTalk for Windows 3.1x does not supply its own drivers for the LK250 keyboard, it relies on using the drivers supplied by Digital on the Pathworks PCSA distribution disk. If Pathworks has not been installed with the LK250 option then the following modifications should be made to the **SYSTEM.INI** file in the **WINDOWS** directory on the basis that the drivers and associated files are available:

### SYSTEM.INI:-

[boot]

keyboard.driv=lk250.driv

[keyboard]

subtype=50

type=k

oemansi.bin=xlat437.bin

keyboard.dll=decuk250.dll

[boot.description]

keyboard.typ=Digital LK250 Keyboard

keyboard=vkd250.386

The following files must exist in the **WINDOWS\SYSTEM** directory :-

lk250.driv

xlat437.bin

vkd250.386

decus250.dll (US LK250 Keyboard Driver)

decuk250.dll (UK LK250 Keyboard Driver)

decda250.dll (Danish LK250 Keyboard Driver)

decfi250.dll (Finnish LK250 Keyboard Driver)

decfr250.dll (French LK250 Keyboard Driver)

decge250.dll (German LK250 Keyboard Driver)

decit250.dll (Italian LK250 Keyboard Driver)

decno250.dll (Norwegian LK250 Keyboard Driver)

decsf250.dll (Swiss/French LK250 Keyboard Driver)

decsg250.dll (Swiss/German LK250 Keyboard Driver)

decsp250.dll (Spanish LK250 Keyboard Driver)

decsw250.dll (Swedish LK250 Keyboard Driver)

decce250.dll (Canadian LK250 Keyboard Driver)

decfc250.dll (Canadian/French LK250 Keyboard Driver)

If the keyboard drivers and files have not been installed correctly the following will be observed:

- 1) Displaying the **Keyboard Macros** dialog box will result in an incorrect keyboard display window. The dialog box should show the LK250 layout and be titled "Digital LK250 Keyboard".

- 2) Although the alphanumeric area of the keyboard may appear to function, the keypad, function keys and centre key cluster will not operate correctly, giving unpredictable results.

*Note: The LK250 keyboard for the PC is designed to operate in 2 modes. Mode 1 emulates an AT keyboard, and Mode 2 emulates a VT320 keyboard. The keyboard is switched between Mode 1 and Mode 2 using **Alt + F17**. Mode 1 is indicated as being active by the 'SPECIAL' LED on the top right hand side of the keyboard. TeemTalk requires the keyboard to be in Mode 2 (VT320). Mode 1 disables certain function keys.*

## Keyboard Nationality

---

When running TeemTalk for Windows 3.1x, the factory default keyboard nationality is determined by the **Keyboard Layout** setting in the **International** dialog box within the Microsoft Windows **Control Panel**. You can specify a different nationality while TeemTalk is running and save it so that it is reasserted each time TeemTalk is loaded or reset. When you exit TeemTalk the keyboard nationality will revert back to that specified in the **International** dialog box.

When running TeemTalk for Windows 95 or NT, the factory default keyboard nationality is determined by the system locale setting. You can specify a different nationality while TeemTalk is running and save it so that it is reasserted each time TeemTalk is loaded or reset. When you exit TeemTalk the keyboard nationality will revert back to that specified in the locale.

To change the current nationality, display the **Terminal Settings** dialog box by selecting **Settings** in the menu bar then **Terminal...**

The **Keyboard Language** option enables you to specify the nationality of the keyboard being used. It is important that this is correct otherwise the characters displayed may not match the key legends. Select the nationality required in this list box then click the **OK** button to action the change and close the dialog box. If you want to save the setting, display the **File** menu and select **Save Session**.

## Cursor Keys

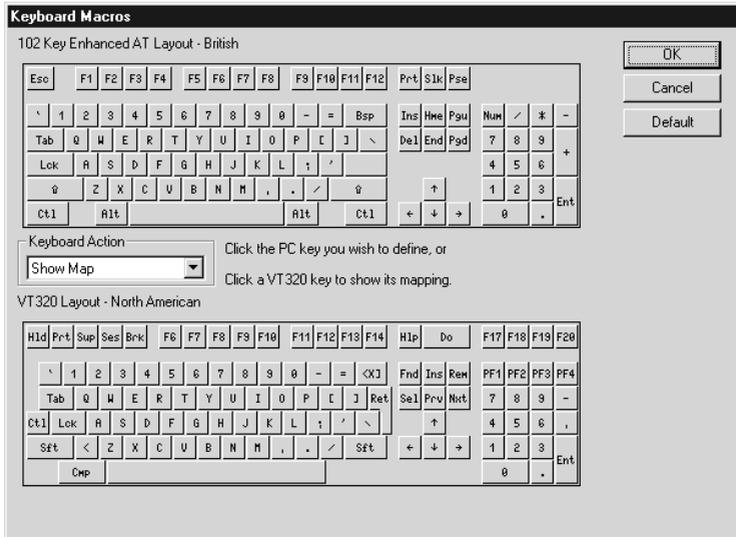
---

The cursor (arrow) keys on some keyboards will only function when the **Alt** key is held down. This applies to IBM PC or any keyboards which do not have a separate cluster of four cursor keys.

To enable the cursor keys permanently so that the **Alt** key does not have to be held down when you want to use them, press the keys **Alt + Num Lock** together so that the **Num Lock** indicator is not lit. To make the cursor keys generate their numeric values again, press **Alt + Num Lock**. The **Num Lock** indicator should be lit.

## Remapping The Keyboard

The **Keyboard Macros** dialog box enables you to redefine the function of most of the keys on your keyboard and shows the mapping of the keyboard for the current terminal emulation mode. This dialog box is displayed by selecting **Keyboard Macros** in the **Settings** menu.



Two keyboard layouts are displayed. The upper layout corresponds to the keyboard you are using, which will be one of the following: 101 key, 102 key, 84 key, Digital's LK250 or LK450, or KEA Systems' PowerStation, depending on the type specified within Microsoft Windows Setup for your PC.

*Note: When an LK250, LK450 or PowerStation keyboard driver is loaded, the **SYSTEM.INI** file is scanned by TeamTalk to see if the string "LK250", "LK450" or "PowerStation" is present and maps the keyboard accordingly.*

The lower layout represents the keyboard associated with the terminal currently being emulated, as specified in the **Emulation Settings** dialog box.

You can show how TeemTalk has mapped your keyboard within the current terminal emulation mode by setting the **Keyboard Action** option (between the two layouts) to **Show Map**, then moving the pointer over a key in the *lower* layout and holding down the left mouse button. The key or combination of keys which emulate the function of the key you are currently pressing will be displayed in the *upper* layout as if pressed in.

*Note: Control key functions are not shown.*

TeemTalk provides two quick and easy ways of changing the default keyboard mapping to suit your requirements.

## Remapping Normal Key Functions

The following method is suitable when the function to be remapped does not require a combination of keys to be pressed to action it. For example, you can make the **F1** key on your keyboard emulate the **Insert** key of the terminal keyboard being emulated, but you cannot specify that pressing the keys **Alt + F1** together will perform the **Insert** key function.

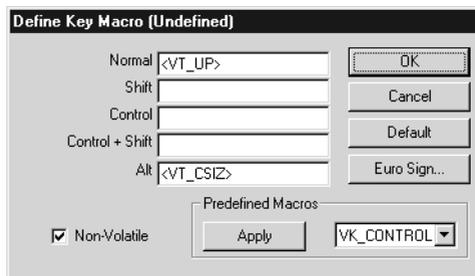
First, set the **Keyboard Action** option to **Map Key**, click the key in the *lower* layout showing the legend of the function required, then click the key in the *upper* layout which you want to assign that function to.

Note that you will now have two keys which emulate the same function, the default mapping and the mapping you have just specified. You can either leave them this way or assign a new function to the key which was mapped by default.

## Remapping Key Combination Functions

The following method is suitable for both normal key functions and key combination functions. For example, you can map the **Insert** key function to the **F1** key on your keyboard, and you can make the keys **Alt + F1** emulate the **Help** key when pressed together.

First, click the key in the upper layout (representing your keyboard) to which you want to assign a function. The **Define Key Macro** dialog box will be displayed, as shown below. This example shows how the **F1** key is mapped by default.



The **Predefined Macros** option at the bottom of this dialog box enables you to select from a list of standard functions associated with the current terminal emulation. Clicking the arrow button will display a list box in which the names of valid key functions (called *virtual key names*) are shown.

*Note: The Virtual Key Names appendix lists all the functions and associated virtual key names for each terminal emulation.*

Before making a selection from this list box, click the pointer in the text box next to the key combination that will be required to perform the function, that is, **Normal** (key pressed on its own), **Shift** (key shifted) etc. For example, to assign the **Help** key function to the key combination **Alt + F1**, click the pointer in the text box next to **Alt**, display the **Predefined Macros** list box and scroll through the selection until **VT\_HELP** is displayed, click the pointer on it then click the **Apply** button. The current function of the **Alt + F1** key combination will be replaced with the **Help** function, indicated in the text box by **<VT\_HELP>**. If you want the mapping of this key to be saved when you perform a **Save Session**, make sure the **Non-Volatile** box is checked. Click the **OK** button to activate the change and close the dialog box. Note that you will now have two keys which emulate the same function, the default mapping and the mapping you have just specified. You can either leave them this way or assign a new function to the key which was mapped by default.

When you have finished remapping the keyboard, click the **OK** button in the **Keyboard Macros** dialog box to close it and cause TeemTalk to assert the changes. You can save the new keyboard mapping so that TeemTalk will reassert it each time it is loaded or reset by displaying the **Save Session As** dialog box, selecting the **Keyboard Macros** option, then clicking the **OK** button.

## Programming A Key

Most of the keys on the keyboard may be programmed with up to five definitions each. Keys that cannot be redefined include **Shift**, **Caps Lock**, **Alt**, **Alt Gr** and **Print Screen**. Both **Ctrl** keys can be redefined.

To program a key, click the key in the upper layout (which represents your keyboard). The **Define Key Macro** dialog box will be displayed. This dialog box shows the current definitions of all the following combinations for the selected key:

**Key**  
**Shift + Key**  
**Control + Key**  
**Control + Shift + Key**  
**Alt + Key**

Each key combination may contain a string of up to 127 characters. The combined total of all the characters that may be programmed into keys is determined by the 127 character limit per definition and the amount of memory available in your PC.

All keyboard macros can be saved so that TeemTalk will reassert them each time it is loaded or reset by displaying the **Save Session As** dialog box from the **File** menu, selecting the **Keyboard Macros** option, then clicking the **OK** button.

## Entering Control Characters

You can enter a control character either as the control key character equivalent or the decimal value of the ASCII character. For example, the control character for the **Return** key function, **CR** (carriage return), can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**.

Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

## Key Combinations & Sequences

You can program a key to perform the function of a combination or sequence of keys. For example, you can cause the **F1** key to perform the same function as pressing the keys **Alt + F4** together, or pressing the keys **F2** then **F3** then **F4**.

Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. The virtual key name has to be enclosed by the **<** and **>** characters in the key definition text box. You may omit the **VK\_** and **VT\_** (etc.) parts of the virtual key name.

To program a key so that it performs the same function as pressing two or more other keys together, type the **<** character followed by the virtual key names linked together with **+** (plus sign) characters and ending with the **>** character.

For example, to program the **F1** key so that when it is pressed it performs the same function as pressing the keys **Alt + F4** together, enter the following characters in the relevant text box:

```
<ALT+F4>
```

To program a key so that it performs the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the **<** and **>** characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces.

For example, to program the **A** key so that when it is pressed it performs the same function as pressing the keys **F2** then **F3** then **F4** enter the following characters in the relevant text box:

```
<F2><F3><F4>
```

## Entering Command Lines

You can enter a command line in a key definition by enclosing it within the ( and ) characters. This enables you to launch an application by just pressing a key. For example, to program the **F1** key so that another instance of TeemTalk-07W is run when the key is pressed, you would enter the following in the relevant text box:

```
(C:\TEEMTALK\TT07W.EXE)
```

## Changing The Window Focus

You can program a key to change the currently selected window or icon (that is the window or icon to which keyboard and mouse commands will be directed) by entering its window class name as a string enclosed by the < and > characters. For example, to program the **F4** key so that the TeemTalk-07W window is selected when the key is pressed, you would enter the following in the relevant text box:

```
<"tt07w">
```

(tt07w is the window class name for TeemTalk-07W.)

## Initiating A Script File

You can program a key to run a script file when pressed by enclosing the name of the file and any arguments within the <' (left angle bracket and single quote) and '> (single quote and right angle bracket) characters.

For example, to program a key so that it will run the script file **myscript.scr** and assign the values **value1** and **value2** to two variables, you would enter the following:

```
<'myscript.scr(value1,value2)'\>
```

Refer to the chapter entitled *Creating A Script File* for more information on initiating script files.

## Action Locally Or Transmit To Host

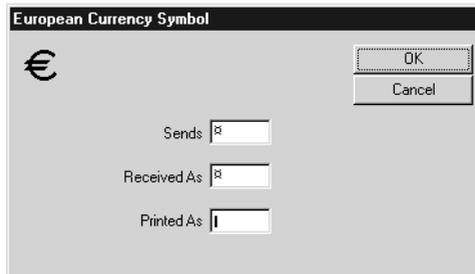
A key definition may be actioned locally or transmitted to the host when the key is pressed. This is determined by the setting of the **Local** check box next to the definition. When the check box is unchecked the definition will be transmitted to the host.

## Default Key Definitions

The default definition of a specific key may be reasserted by clicking the **Default** button in the **Define Key Macro** dialog box for that key. The default definition of the entire keyboard may be reasserted by clicking the **Default** button in the **Keyboard Macros** dialog box.

## Euro Sign

TeemTalk enables you to generate the euro sign from the keyboard by pressing the keys **Alt + 4** by default. TeemTalk also provides a cross-mapping mechanism to allow any unused character symbols or string to be cross-mapped to display the euro. This means, for instance, that a host application needing to display the euro could be adjusted to send an unused character or character string, which TeemTalk would convert to the euro symbol. Keyboard mapping is also configurable to allow the input to the application to be similarly cross-mapped. The cross-mapping configuration is specified in the **Euro Currency Symbol** dialog box which is displayed by clicking the **Euro Sign** button in the **Define Key Macro** dialog box.



TeemTalk also provides the ability to print the euro symbol on printers that are euro compliant, or to send a set of sequences that approximate to that symbol on non-euro compliant printers. Similarly, data can be copied to or pasted from other Microsoft Windows desktop applications that are also euro compliant.

## Compose Character Sequences

---

Compose character sequences can be used to generate codes for characters not shown on your keyboard when you are in VT220 mode.

The characters that can be composed depend on the setting of the **Multinational** option in the **Emulation Settings** dialog box. When this option is not selected only characters found in the character set that corresponds to the selected keyboard nationality can be composed. When **Multinational** is selected (default), characters from all national keyboard layouts may be composed.

If a character is a diacritical symbol (e.g. ´ or ¨) and this symbol does not appear on the keyboard, an equivalent character can be used in some cases. The diacritical symbols and the possible substitutes are shown below. There are no equivalents for the circumflex accent and tilde mark.

| Diacritical Mark | Equivalent Character      |
|------------------|---------------------------|
| ´ Acute accent   | ' Apostrophe              |
| ¨ Umlaut         | " Double quote            |
| ` Grave accent   | ' Single quote            |
| ◊ Ring mark      | * Asterisk or degree sign |

To compose a character, first find the character you wish to compose in the left hand column of the following tables. The two characters shown in the right hand column are the keys that are used to create it. Several alternatives may be given for generating the same character. A compose sequence is initiated by pressing the keys **Alt + I** together, followed by the key bearing the first character then the key bearing the second character.

*Note: The compose character sequence can also be initiated by pressing a key defined with the COMPOSE virtual key name.*

A compose character sequence may be abandoned before completion by pressing the **Delete** key. Pressing **Alt + I** (or the key defined with the COMPOSE virtual key name) again before completing a compose character sequence will cause it to be abandoned and a second sequence to be started. An invalid compose character sequence will cause the bell to sound.

The following tables use several conventions:

The keys bearing the characters used to compose a special character may be pressed in any order unless (**in order**) is specified.

If a nationality is specified with the character description, for example (**Dutch**), then the character can only be composed when the **Multinational** option in the **Emulation Settings** dialog box is *not* selected.

## COMPOSE CHARACTER SEQUENCES

|   |                   |  |
|---|-------------------|--|
| " | quotation mark    | <b>" space</b>   |
| # | number sign       | <b>+ +</b>   |
| ' | apostrophe        | <b>' space</b>   |
| @ | commercial at     | <b>a a</b> or <b>A A</b><br>(Multinational)<br><b>a a</b> or <b>A A</b> or <b>a A</b><br>(National)  |
| [ | opening bracket   | <b>((</b>  |
| \ | back slash        | <b>//</b> or <b>/ &lt;</b>   |
| ] | closing bracket   | <b>) )</b>   |
| ^ | circumflex accent | <b>^ space</b>   |
| ` | grave accent      | <b>` space</b>   |
| { | opening brace     | <b>( -</b>   |
|   | vertical line     | <b>/ ^</b>   |
| } | closing brace     | <b>) -</b>   |
| ~ | tilde             | <b>~ space</b>   |
| ! | inverted !        | <b>!!</b>  |
| ¢ | cent sign         | <b>c /</b> or <b>C /</b><br><b>c  </b> or <b>C  </b>   |
| £ | pound sign        | <b>l -</b> or <b>L -</b><br><b>l =</b> or <b>L =</b>   |
| ¥ | yen sign          | <b>y -</b> or <b>Y -</b><br><b>y =</b> or <b>Y =</b>   |
| § | section sign      | <b>s o</b> or <b>S O</b> or <b>s !</b><br><b>S !</b> or <b>s O</b> or <b>S O</b><br>(National & Multinational)<br>National includes <b>s O</b> or <b>S o</b> |
| ¤ | currency sign     | <b>x o</b> or <b>X O</b><br><b>x 0</b> or <b>X 0</b>   |
| © | copyright sign    | <b>c o</b> or <b>C O</b><br><b>c 0</b> or <b>C 0</b>   |

|   |                                 |   |
|---|---------------------------------|---|
| ª | feminine ordinal indicator      | <b>a -</b> or <b>A _</b>                                |
| « | double open angle brackets      | <b>&lt; &lt;</b>  |
| ° | degree sign                     | <b>0 ^</b> (Multinational)<br><b>o space</b> (National) |
| ± | plus or minus sign              | <b>+ -</b>  |
| ² | superscript 2                   | <b>2 ^</b>  |
| ³ | superscript 3                   | <b>3 ^</b>  |
| µ | micro sign                      | <b>/ u</b> or <b>/ U</b><br>(in order)                  |
| ¶ | paragraph sign                  | <b>p !</b> or <b>P !</b>                                |
| • | centred period                  | <b>. ^</b>  |
| ¹ | superscript 1                   | <b>1 ^</b>  |
| º | masculine ordinal indicator     | <b>o _</b> or <b>O _</b>                                |
| » | double closed angle brackets    | <b>&gt; &gt;</b>  |
| ¼ | fraction one quarter            | <b>1 4</b><br>(in order)                                |
| ½ | fraction one half               | <b>1 2</b><br>(in order)                                |
| ¾ | fraction three-quarters (Dutch) | <b>3 4</b><br>(in order)                                |
| ƒ | Florin (Dutch)                  | <b>f l</b><br>(in order)                                |
| ƒ | i j sign (Dutch)                | <b>i j</b><br>(in order)                                |
| ¿ | inverted ?                      | <b>? ?</b>  |
| À | A grave                         | <b>A `</b>  |
| Á | A acute                         | <b>A '</b>  |
| Â | A circumflex                    | <b>A ^</b>  |
| Ã | A tilde                         | <b>A ~</b>  |

**COMPOSE CHARACTER SEQUENCES (continued)**

|   |                                  |                             |
|---|----------------------------------|-----------------------------|
| Ä | A umlaut                         | A " or " A                  |
| Å | A ring                           | A * or A °<br>(degree sign) |
| Æ | A E diphthong                    | A E<br>(in order)           |
| Ç | C cedilla                        | / u or / U<br>(in order)    |
| È | E grave                          | E `                         |
| É | E acute                          | E '                         |
| Ê | E circumflex                     | E ^                         |
| Ë | E umlaut                         | E " or " E                  |
| Ì | I grave                          | I `                         |
| Í | I acute                          | I '                         |
| Î | I circumflex                     | I ^                         |
| Ï | I umlaut                         | I " or " I                  |
| Ñ | N tilde                          | N ~                         |
| Ò | O grave                          | O `                         |
| Ó | O acute                          | O '                         |
| Ô | O circumflex                     | O ^                         |
| Õ | O tilde                          | O ~                         |
| Ö | O umlaut                         | O " or " O                  |
| Œ | O E diphthong<br>(DEC Multinat.) | O E<br>(in order)           |
| Ø | O slash                          | O /                         |
| Ù | U grave                          | U `                         |
| Ú | U acute                          | U '                         |

|   |                             |                             |
|---|-----------------------------|-----------------------------|
| Û | U circumflex                | U ^                         |
| Ü | U umlaut                    | U " or " U                  |
| ÿ | Y umlaut<br>(DEC Multinat.) | Y " or " Y                  |
| ß | German small<br>sharp s     | s s                         |
| à | a grave                     | a `                         |
| á | a acute                     | a '                         |
| â | a circumflex                | a ^                         |
| ã | a tilde                     | a ~                         |
| ä | a umlaut                    | a " or " a                  |
| å | a ring                      | a * or a °<br>(degree sign) |
| æ | a e diphthong               | a e<br>(in order)           |
| ç | c cedilla                   | c,<br>(comma)               |
| è | e grave                     | e `                         |
| é | e acute                     | e '                         |
| ê | e circumflex                | e ^                         |
| ë | e umlaut                    | e " or " e                  |
| ì | i grave                     | i `                         |
| í | i acute                     | i '                         |
| î | i circumflex                | i ^                         |
| ï | i umlaut                    | i " or " i                  |
| ñ | n tilde                     | n ~                         |
| ò | o grave                     | o `                         |

**COMPOSE CHARACTER SEQUENCES (continued)**

|          |                                  |                          |
|----------|----------------------------------|--------------------------|
| <b>ó</b> | o acute                          | <b>o'</b>                |
| <b>ô</b> | o circumflex                     | <b>o ^</b>               |
| <b>õ</b> | o tilde                          | <b>o ~</b>               |
| <b>ö</b> | o umlaut                         | <b>o "</b> or <b>¨ o</b> |
| <b>œ</b> | o e diphthong<br>(DEC Multinat.) | <b>o e</b><br>(in order) |
| <b>ø</b> | o slash                          | <b>o /</b>               |

|          |              |                          |
|----------|--------------|--------------------------|
| <b>ù</b> | u grave      | <b>u `</b>               |
| <b>ú</b> | u acute      | <b>u'</b>                |
| <b>û</b> | u circumflex | <b>u ^</b>               |
| <b>ü</b> | u umlaut     | <b>u "</b> or <b>¨ u</b> |
| <b>ÿ</b> | y umlaut     | <b>y "</b> or <b>¨ y</b> |
|          |              |                          |

*Notes*

# 4

## Mouse Functions

This chapter describes the special functions assigned to the mouse buttons by TeemTalk and how to redefine the buttons.

### Introduction

TeemTalk assigns a variety of special functions to the mouse buttons. Each button can be used to action up to six functions when pressed in conjunction with modifier keys. The following table lists the functions assigned to each button and key combination by default.

|                        | Left Button      | Right Button  |
|------------------------|------------------|---------------|
| <b>Normal</b>          | Select           | Edit Copy     |
| <b>Shift</b>           | Extend Selection | Edit Paste    |
| <b>Control</b>         | Action Hotspot   | Show Hotspots |
| <b>Control + Shift</b> | Select Rectangle | Unassigned    |
| <b>Alt</b>             | Send CR          | Send Keyword  |
| <b>Double Click</b>    | Select Word      | Unassigned    |

### Redefining The Mouse Buttons

TeemTalk enables you to redefine the functions assigned to the mouse buttons via the **Mouse Button Actions** dialog box (shown overleaf), which is displayed from the **Settings** menu. This enables you to specify the function of the left and right mouse buttons when they are pressed on their own or in conjunction with modifier keys. You can assign up to six functions to each button. Clicking one of the arrow buttons will display a drop-down list box which lists all the standard functions that can be assigned.



The following functions can be assigned:

- |                  |                  |
|------------------|------------------|
| Unassigned       | Send CR          |
| Select           | Send Keyword     |
| Extend Selection | Middle Button    |
| Edit Copy        | Select Rectangle |
| Edit Paste       | Select Word      |
| Show Hotspots    | Select and Copy  |
| Action Hotspot   | Cursor Select    |
| Move Cursor      |                  |

You can also enter a definition of your own in the text box associated with each button and key combination. Definitions are entered in the same way as for keyboard macros and soft buttons, as described in the *Setup Menus* chapter.

The setting of the **Highlight When Actioned** option determines whether or not a visual indication is given that a function has been actioned when a hotspot is clicked.

The **Edit...** button becomes active when you select the **Show Hotspots** or **Action Hotspot** setting. Clicking the **Edit...** button will open a text editor window in which the contents of the current hotspot definition file will be displayed. This enables you to make changes without having to leave TeemTalk. The text editor used by default is **notepad.exe**. You can specify a different text editor by modifying the **Editor=** line in the TeemTalk private profile file.

## Selecting & Copying Text

---

You can use the mouse buttons to copy and paste text. The region of the display that will be selected for copying depends on whether you use the **Select**, **Select Rectangle**, **Select and Copy** or **Select Word** function.

The **Select** function will select all text from the start position to the finish position, working left to right across the entire width of the display, whereas the **Select Rectangle** function will only select text contained within the rectangular area defined by the start position (top left corner) and the finish position (bottom right corner). The **Select and Copy** function is the same as **Select** but will also copy the selected data to the Clipboard automatically. The **Select Word** function will cause the word under the mouse cursor to be selected.

The default method for selecting and copying text is as follows. Place the cursor at the start of the text to be copied, hold down the **Left** mouse button then drag the cursor across to the end of the required text and release the mouse button. To extend the selection, hold down the **Shift** key and click the **Left** mouse button at the new position. Click the **Right** mouse button to copy the selected text to the clipboard. Text copied to the clipboard may be pasted at the current cursor position by holding down the **Shift** key and clicking the **Right** mouse button.

## Disabling The Copy & Paste Functions

---

In some cases it may be necessary to disable the copy and paste function of the mouse buttons to prevent accidental editing. This can be achieved using the following initialization file commands or command line options:

|                      |  |
|----------------------|--|
| Initialization file: | <b>mouseEdit=off</b> or <b>mouseEdit=disabled</b>    |
| Command line:        | <b>-me0</b> allows highlighting but no copy or paste |
|                      | <b>-me1</b> all editing functions enabled            |
|                      | <b>-me2</b> all editing functions disabled           |

When the mouse editing functions are disabled, use the **Edit** menu options or the following keyboard commands to copy and paste instead:

|        |   |
|--------|---|
| Copy:  | <b>Shift + Delete</b> (i.e. Numeric keypad . key) |
| Paste: | <b>Shift + Insert</b> (i.e. Numeric keypad 0 key) |

## 2-Button Mouse Emulating 3-Button

---

You can assign the function of the middle button found on a three button mouse to any button or button and key combination. The **Mouse Button Actions** dialog box includes a **Middle Button** setting for this purpose.

## Show & Action Hotspots

---

TeemTalk incorporates a user-definable hotspot facility which enables you to invoke a function by clicking the mouse cursor over a keyword displayed on the screen. For example, an application may display information relating to keys you can press to perform a particular function. Instead of pressing the key on the keyboard, you could invoke the function by moving the mouse cursor over the displayed key name, holding down the **Control** key and clicking the **Left** mouse button (assuming default mouse configuration).

Hotspots are supported in ALL terminal emulation modes. TeemTalk provides a set of default hotspot keywords for each mode. These relate to key functions specific to the emulation. For example, in VT200 mode you can click on the word **Help** displayed on the screen and TeemTalk will execute the function associated with the **Help** key. Refer to the *Hotspots* chapter for details.

You can identify hotspots that are currently present in display memory by holding down the **Control** key and the **Right** mouse button. All colour attributes will be temporarily removed from the display and the hotspots will be highlighted with a red background. Releasing the keys will return the display to its original state.

## Send Keyword

---

The **Send Keyword** function enables you to click on any delimited word displayed on the screen and it will be sent to the host, as long as the word is not already defined as a hotspot. Keyword delimiters are the same as for hotspots by default, that is: **space, NULL, /, := () [ and ]**.

## Moving The Cursor In Block Mode

---

When TeemTalk is in any of the local block modes you can use the **Move Cursor** function to quickly move the text cursor. Move the mouse cursor to the required position then click the mouse button (with modifier key(s) held down) assigned with the **Move Cursor** function. The text cursor will then jump to that position.

# 5

## The Toolbar

This chapter describes how to use and redefine the toolbar and associated floating button palette.

### Using The Toolbar

The toolbar and associated floating button palette provide a quick way of actioning commands or displaying setup dialog boxes by just clicking a button. TeemTalk displays a toolbar below the menu bar by default.



The toolbar contains a series of buttons with graphical representations of their functions. These buttons are predefined with functions found in the setup menus and are described in the next section. You can redefine all the buttons and add or remove buttons from the toolbar via the **Button Tools** dialog box which is described later.

The toolbar can be pulled away from the menu bar and floated on the display by positioning the mouse pointer anywhere in the toolbar except on a button, holding down the left mouse button then dragging the pointer down until the toolbar outline changes shape. Releasing the mouse button will display the floating button palette.



The floating button palette contains the same buttons as the toolbar. You can move and resize the palette in the same way as any other window. To convert the floating button palette back into the toolbar, click the control menu box at the top left corner of the palette window and select **Attach**. If you click the shutdown button on the floating button palette, you can restore display of the tool buttons by selecting the **Button Tools** option in the **Settings** menu and checking the **Visible** option in the dialog box.

## The Predefined Button Tools

---

The toolbar displayed by default contains a series of buttons defined with functions found in the setup menus. These functions are listed below and described in the *Setup Menus* chapter.



Displays the **New Connection** dialog box for making a serial or network host connection.



Displays the **Open Session** dialog box. This enables you to load a particular setup configuration.



Displays the **Save Session As** dialog box. This enables you to specify how the current session configuration is to be saved.



Copies selected data to the clipboard.



Pastes clipboard data at the current cursor position.



Displays the **Initiate File Transfer** dialog box for transferring files using the Kermit, XMODEM, XMODEM-1K, YMODEM Batch, ZMODEM, ASCII, or ICL FTF protocols. Refer to the *File Transfer* chapter for details.



Displays the **Run Script** dialog box for specifying the name of a script file to execute.



Displays the **Printer Setup** dialog box. This enables you to select any printer that is configured in Microsoft Windows.



Displays the **Print Screen** dialog box for producing a hardcopy of screen data in a particular format.



Displays the **Attributes** dialog box. This enables you to specify the colours used in the dialog area and how text with attributes is displayed.



Displays the **Keyboard Macros** dialog box. This shows the mapping of your keyboard and enables you to redefine the function of keys.



Displays the **Soft Buttons** dialog box for redefining the buttons at the bottom of the TeemTalk window.



Displays the **Mouse Button Actions** dialog box for assigning up to six functions to each mouse button.



Increases the size of the window to the next font size up while retaining the same number of rows and columns.



Decreases the size of the window to the next font size down while retaining the same number of rows and columns.



Displays the **Button Tools** dialog box for redefining the toolbar.



Closes the current session.



Resets the current terminal emulation mode.



Erases the contents of the window and the scroll buffer.



Displays the Help contents dialog box.



Erases the contents of the graphics area and redraws all visible segments.



Erases the contents of the dialog area and buffer.



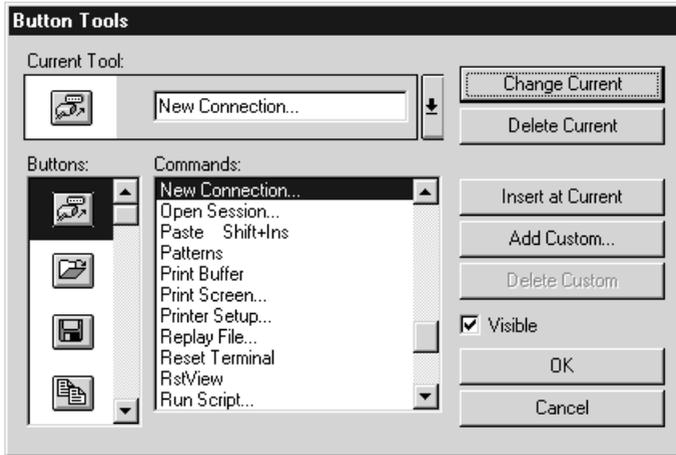
Toggles dialog area visibility on and off.



Activates the zoom/pan feature (except TeemTalk-05W and TeemTalk-05W32).

## Redefining The Toolbar

Clicking the last button in the default toolbar, or selecting **Button Tools** from the **Settings** menu will display a dialog box which enables you to redefine the toolbar.



Up to 64 button tools can be defined, all of which can be displayed in the floating button palette but only one row of buttons can be displayed in the toolbar. The maximum number of buttons that can be displayed in the toolbar depends on the display resolution and the size of the window.

A button tool is defined in two stages. The first stage is to specify the button bitmap for display in the toolbar and the second stage is to assign a function to it.

### Adding Button Bitmaps

Clicking the arrow button in the **Current Tool** box will display a list box showing all the button bitmaps in the order displayed in the toolbar, together with their functions. The **Current Tool** will be highlighted in this list. When you add a new button to the toolbar it is positioned to the left of the button currently selected in this list. Select the current tool then close the list box by clicking the arrow button again.

To add a new button, select a button bitmap from the **Buttons** list box then click the **Insert at Current** button. Note that the function of this new button will be the same as that of the previously selected button tool until you redefine it. You can insert a space before the current button tool as it is displayed in the toolbar by selecting [**Space**] in the **Commands** list box then clicking the **Insert at Current** button.

You are not restricted to the set of predefined button bitmaps displayed in the **Buttons** list box. You can add your own customised buttons to the bottom of the list by clicking the **Add Custom...** button. This will display the **Load Custom Bitmap** dialog box which enables you to select a bitmap file from which a button will be automatically generated.

Specify the name of the bitmap file to use then click the **OK** button. The dialog box will close and you will see the new button bitmap highlighted at the bottom of the **Buttons** list box.

If you want to delete a custom button from the **Buttons** list box, select the button bitmap then click the **Delete Custom** button. DO NOT click the **Delete Current** button as this will remove the currently selected button tool from the toolbar. Note that you cannot delete the predefined button bitmaps displayed by default.

## Assigning Functions To Buttons

You can assign a variety of functions to the buttons. You can either enter a definition of your own or you can select a menu command from the **Commands** list box.

The buttons displayed in the toolbar by default are defined with some of the functions listed in the setup menus. These enable you to quickly action a command or display a setup dialog box without having to display the menu first. The **Commands** list box displays all the menu items that can be assigned to the buttons.

To assign a function to a button, make sure that the button bitmap required is displayed in the **Current Tool** box, enter the new definition in the associated text box or select a menu command from the **Commands** list box, then click the **Change Current** button to action the change. The toolbar will not be updated until you click the **OK** button to close the dialog box.

## Entering Control Characters

You can enter a control character in a button tool definition either as the control key character equivalent or the decimal value of the ASCII character. For example, the control character for the **Return** key function, **CR** (carriage return), can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**. Refer to the *Character Sets* appendix for code and decimal references.

---

## Key Combinations & Sequences

You can program a button tool to perform the function of a combination or sequence of keys. For example, you can cause a button to perform the same function as pressing the keys **Alt + F4** together, or pressing the keys **F2** then **F3** then **F4**.

Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. The name has to be enclosed by the < and > characters in the **Current Tool** text box. You may omit the **VK\_**, **VT\_** parts (etc.) of the virtual key name.

To program a button so that it performs the same function as pressing two or more other keys together, type the < character followed by the virtual key names linked together with + characters and ending with the > character. For example, to program a button so that when it is clicked it performs the same function as pressing the keys **Alt + F4** together, enter the following characters in the **Current Tool** text box:

```
<ALT+F4>
```

To program a button so that it performs the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the < and > characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces. For example, to program a button so that when it is clicked it performs the same function as pressing the keys **F2** then **F3** then **F4** enter the following characters in the **Current Tool** text box:

```
<F2><F3><F4>
```

## Entering Command Lines

You can enter a command line in a button definition by enclosing it within the ( and ) characters. This enables you to launch an application by just clicking a button. For example, to program a button so that another instance of TeemTalk-07W is run when the button is clicked, you would enter the following in the **Current Tool** text box:

```
(C:TEEMTALK\TT07W.EXE)
```

## Changing The Window Focus

You can program a button to change the currently selected window or icon (that is the window or icon to which keyboard and mouse commands will be directed) by entering its window class name as a string enclosed by the < and > characters. For example, to program a button so that the TeemTalk-07W window is selected when it is clicked, you would enter the following in the **Current Tool** text box:

```
<"tt07w"> (tt07w is the window class name for TeemTalk-07W.)
```

## Initiating A Script File

You can program a button to run a script file when pressed by enclosing the name of the file and any arguments within the '<' (left angle bracket and single quote) and '>' (single quote and right angle bracket) characters. For example, to program a button so that it will run the script file **myscript.scr** and assign the values **value1** and **value2** to two variables, you would enter the following:

```
<'myscript.scr(value1,value2)'>
```

Refer to the chapter *Creating A Script File* for more information.

## Removing Button Tools

You can remove individual button tools from the toolbar or you can remove the entire toolbar and floating button palette from the display.

A button tool is removed by selecting it in the **Current Tool** list box then clicking the **Delete Current** button. To remove the toolbar and floating button palette from the display, deselect the **Visible** check box.

## Saving The Button Tools

When you have finished defining button tools you can save them so that they will be reasserted when TeemTalk is loaded or reset by selecting **Save Session** in the **File** menu.

Button tool definitions are saved in a file which has the same name (and is in the same directory) as the current workspace file but with the extension **.tbr** instead of **.wsp**. If you specify a different workspace file name in the **Save Session As** dialog box and save the current settings, TeemTalk will automatically make a copy of the current button tool definitions file and give it the new workspace name if a file with the same name does not already exist.

# 6

## Hotspots

---

**This chapter describes the hotspot facility which enables functions to be performed by clicking on keywords displayed on the screen.**

### Using Hotspots

---

TeemTalk incorporates a user-definable hotspot facility which enables you to invoke a function by clicking the mouse pointer over a keyword displayed on the screen. For example, an application may display information relating to keys you can press to perform a particular function. Instead of pressing the key on the keyboard, you could invoke the function by moving the mouse pointer over the displayed key name, holding down the **Control** key and clicking the **Left** mouse button.

Hotspots are supported in ALL terminal emulation modes. TeemTalk provides a set of default keywords for each mode. These keywords relate to key functions specific to the emulation. For example, in VT200 mode you can click on the word **Help** displayed on the screen and TeemTalk will execute the function associated with the **Help** key.

You can identify hotspots that are currently present in display memory by holding down the **Control** key and the **Right** mouse button (assuming default mouse configuration). All colour attributes will be temporarily removed from the display and the hotspots will be highlighted with a red background. Releasing the keys will return the display to its original state.

In summary, the following key and mouse button combinations are used to identify and action hotspot functions by default:

|                          |                                     |
|--------------------------|-------------------------------------|
| Identify hotspots:       | <b>Control + Right Mouse Button</b> |
| Action hotspot function: | <b>Control + Left Mouse Button</b>  |

*Note: These functions may be assigned to different mouse button and key combinations. Refer to the Mouse Functions chapter for details.*

## Defining Hotspots

---

Hotspot keywords and associated functions are specified in a text file which has the same name (and is in the same directory) as the current workspace file but with the extension **.hot** instead of **.wsp**. For example, the default hotspot definitions supplied with TeemTalk-07W32 are stored in the file **tt07w.hot**. If you specify a different workspace file name in the **Save Session As** dialog box and save the current settings, TeemTalk will automatically make a copy of the current hotspot file and give it the new workspace name if a hotspot file with the same name does not already exist.

*Note: A hotspot file may not necessarily be in use, in which case TeemTalk will not attempt to create a new hotspot file with the new workspace file.*

You can view the contents of the hotspot file currently in use without leaving TeemTalk by displaying the **Mouse Button Actions** dialog box, selecting one of the hotspot options (from a drop down list box if necessary), then clicking the **Edit...** button.

The format of entries in the hotspot definition file is as follows. Each hotspot definition is entered on a separate line and definition lines are grouped under headings which specify the terminal emulation mode in which they will take effect. The following definition line examples are taken from the **tt07w.hot** file supplied with TeemTalk-07W32.

**[Separators]**

**Separators=/,:=()[]**

**[Definitions]**

**F1=<VK\_F1>**

**F2=<VK\_F2>**

**[Definitions,VT52]**

**[Definitions,VT200 7-Bit]**

**F6=<VT\_F6>**

**F7=<VT\_F7>**

The first command group, headed **[Separators]**, specifies the displayed characters which delimit the hotspot keyword. Delimiters include **SPACE** and **NULL** as well as the characters shown in the example by default. The end delimiter does not need to be the same as the first. Delimiters are necessary to prevent hotspots occurring within words that happen to contain the same formation of characters as the keywords.

The following command groups specify the keywords used in each terminal emulation mode. Keyword definitions that can apply to all modes are specified under the heading **[Definitions]**. Keyword definitions that apply to a specific mode are specified under the heading **[Definitions,<emulation>]**, where **<emulation>** must be the name of the terminal emulation mode as already specified in the default hotspot

definitions file. Note that a keyword definition under a **[Definitions,<emulation>]** heading will override the definition given to the same keyword in any other definitions group when that particular emulation is running.

Each keyword definition line consists of the keyword immediately followed by an equals (=) sign, then the function that it will perform. The keyword can consist of any characters except those specified as delimiters in the **Separators=** line. TeemTalk will search for the keyword on a case insensitive basis.

The function that will be performed when the keyword is selected is specified in the same way as for key macros, soft buttons and script language programming.

## Entering Control Characters

You can enter a control character in a keyword definition either as the control key character equivalent or the decimal value of the ASCII character. For example, the control character for the **Return** key function, **CR** (carriage return), can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code. This could be used to define the keyword **Login** to enable you to log on to a host:

**Login=hostname^M**

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

## Key Combinations & Sequences

You can define a keyword to perform the function of a particular key, a combination of keys, or a sequence of keys. For example, you can define a keyword to perform the same function as pressing the key **F4**, or pressing the keys **Alt + F4** together, or pressing the keys **F2** then **F3** then **F4**. Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. You may omit the **VK\_**, **VT\_** (etc.) parts of the name.

To define a keyword so that it will perform the function of a particular key, type the **<** character followed by the virtual key name then the **>** character. For example, to define the keyword **Insert** so that it will perform the same function as the **Insert** key found on the DEC VT320 keyboard, enter the following line in the relevant Definitions command group:

**Insert=<VT\_INSERT>**

To define a keyword so that it will perform the same function as pressing two or more other keys together, type the **<** character followed by the virtual key names linked

together with + characters and ending with the > character. For example, to define the keyword **Help** so that when it is clicked it performs the same function as pressing the keys **Alt + F4** together, enter the following line in the relevant Definitions command group:

```
Help=<ALT+F4>
```

To define a keyword so that it will perform the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each name with the < and > characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces. For example, to define the keyword **Command** so that when it is clicked it performs the same function as pressing the keys **F2** then **F3** then **F4**, enter the following:

```
Command=<F2><F3><F4>
```

## Entering Command Lines

You can enter a command line in a keyword definition by enclosing it within the ( and ) characters. For example, to define the keyword **TT07W** so that when it is clicked another instance of TeemTalk-07W32 is run, you would enter the following:

```
TT07W=(C:\PROGRAMFILES\TEEMTALK\TT07W.EXE)
```

## Changing The Window Focus

You can define a keyword to change the currently selected window or icon (that is the window or icon to which keyboard and mouse commands will be directed) by entering its window class name as a string enclosed by the < and > characters. For example, to define the keyword **TeemTalk** so that the TeemTalk-07W32 window is selected when the keyword is clicked, you would enter the following line in the relevant Definitions command group:

```
TeemTalk=<"tt07w"> (tt07w is the window class name for TeemTalk-07W32.)
```

## Initiating A Script File

You can define a keyword to run a script file when clicked by enclosing the name of the file and any arguments within the <' (left angle bracket and single quote) and '> (single quote and right angle bracket) characters. For example, to define the keyword **Script** so that it will run the script file **myscript.scr** and assign the values **value1** and **value2** to two variables, you would enter the following in the relevant Definitions command group:

```
Script=<'myscript.scr(value1,value2)'>
```

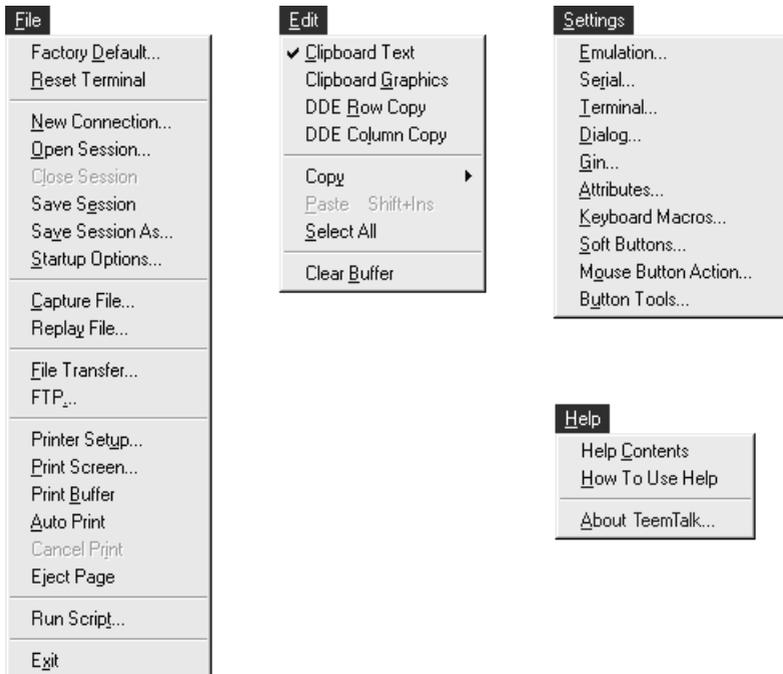
## 7

# Setup Menus

This chapter describes the options available in the setup menus and dialog boxes.

## Selecting & Closing Menus

The following menus can be displayed from the menu bar:



### To display a menu:

**Mouse:** Click the title of the menu required.

**Keyboard:** Hold down the **Alt** key and press the key bearing the underlined character in the menu title. For example, pressing **Alt + F** will display the **File** menu.

When the menu bar is not displayed you can still display the menus by pressing the following keys:

|                |                              |
|----------------|------------------------------|
| <b>Alt + F</b> | for the <b>File</b> menu     |
| <b>Alt + E</b> | for the <b>Edit</b> menu     |
| <b>Alt + S</b> | for the <b>Settings</b> menu |
| <b>Alt + H</b> | for the <b>Help</b> menu     |

### To close a menu:

**Mouse:** Click anywhere outside the menu.

**Keyboard:** Press the **Alt** key.

## *Using The Menus*

---

When you display a menu and move the cursor over the menu options, the status bar at the bottom of the TeemTalk window will change to display a brief description of the option at the cursor position.

The menu options follow several conventions:

Options that are displayed dimmed are not applicable to the current mode of operation and cannot be selected. An example of this is the **Cancel Print** option in the **File** menu. This can only be selected after a print command has been initiated.

Options that include an underlined character may be actioned by pressing the key bearing that character. For example, pressing the **X** key while the **File** menu is displayed will cause TeemTalk to shut down.

Options that are *not* followed by an ellipsis (...) perform a particular function when selected. For example, selecting **Save Session** in the **File** menu will cause TeemTalk to save the session configuration to the currently selected saved settings files.

Options that *are* followed by an ellipsis indicate that a dialog box will be displayed with all the selections applicable to that option. For example, selecting **New Connection...** in the **File** menu will display a dialog box in which you can specify host communication settings.

Some options display a tick mark when they are selected or activated, such as the **Clipboard Text** option in the **Edit** menu.

## To select a menu option:

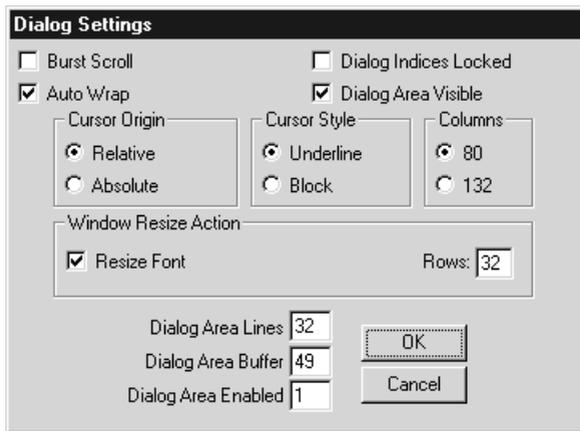
**Mouse:** Click the menu option.

**Keyboard:** Method 1: If the option includes an underlined character, press the key bearing that character. For example, pressing **X** while the **File** menu is displayed will cause TeemTalk to shut down.

Method 2: Use the up or down arrow keys to highlight the option required then hit **Return**.

## Dialog Boxes

Selecting an option which is followed by an ellipsis (...) will cause a dialog box to be displayed. The example shown below is displayed by selecting the **Dialog...** option in the **Settings** menu.



There are four basic methods for making selections within the dialog boxes.

Options preceded by a check box, such as **Auto Wrap** in the example above, are true or selected when the box contains a ✓ or X, and false or unselected when the box is empty. Click the pointer in the box to toggle the setting on or off.

When a group of options preceded by round buttons are enclosed in a box, such as the **Cursor Origin** options in the example above, only one of these options is selected or true at any one time. The currently selected option is indicated by a button with a dark centre. These buttons behave just like radio buttons in that clicking one will cause the previously selected button to be deselected.

Some options require you to type information in a text box, such as the **Dialog Area Lines** option.

When an option has many possible settings, these will be shown in a list box. The **Baud Rate** option in the **Serial Settings** dialog box is an example of this. To make a selection using the mouse, click the arrow button to display a drop-down list box then click on the setting required. If the list is long a scroll bar may be displayed. To make a selection using the keyboard, press the up or down arrow keys to cycle through the available settings until the one required is highlighted in the box.

### To select a dialog box option:

- Mouse:** Click the check box, button or list box. The current setting is highlighted or surrounded by a dotted rectangle, or both.
- Keyboard:** Press the **Tab** key to move forward through the options (left to right, top to bottom), or **Shift + Tab** to move backwards, until the required option is highlighted or surrounded by a dotted rectangle, or both. Press the **Spacebar** to toggle check boxes or buttons on or off.

### To close a dialog box without actioning changes:

- Mouse:** Click the **Cancel** button.
- Keyboard:** Press the **Tab** or **Shift + Tab** keys to move the cursor until it rests over the **Cancel** button and press **Return** or the **Spacebar**.

### To close a dialog box and action changes:

- Mouse:** Click the **OK** button.
- Keyboard:** Press **Return**.

## **Default Settings**

---

TeemTalk is supplied with the setup options set to factory default. If these have been altered since and you wish to reassert the original settings of all the options, display the **File** menu and select the **Factory Default** option.

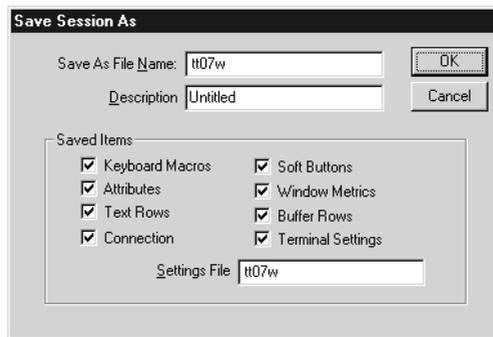
Some dialog boxes include a **Default** button to enable the factory default settings of options contained in the dialog box to be reasserted.

## Creating A Connection Template

You can save the current session configuration as a connection template. To make TeemTalk automatically attempt to make a host connection using the same settings the next time it is loaded, display the **File** menu and select the **Save Session** option.

TeemTalk enables you to create multiple connection templates, any one of which can be used either when TeemTalk is loaded or while it is running. The procedure is as follows:

1. In the **File** menu, select the **Save Session As...** option to display the following dialog box.



2. In the **Saved Items** box, indicate which user preference settings are to be saved by checking the boxes next to the relevant options.
3. In the **Settings File** text box, specify the name of the terminal emulation settings file (and the directory path if different from the default) which is to store settings only affecting the terminal emulation. The default filename is **tt\*w.nv**, where \* is either **05**, **07** or **11**, depending on your version of TeemTalk.

*Note: There is no need to specify file extensions as defaults are applied when the files are created.*

4. In the **Save As File Name** text box, specify the name of the workspace settings file (and the directory path if different from the default) which is to store the user preference settings selected by the **Saved Items** options. The default filename is **tt\*w.wsp**, where \* is either **05**, **07** or **11**, depending on your version of TeemTalk.

*Note: Splitting the saved settings into two files enables users to share a common terminal emulation settings file while allowing each user to have their own workspace settings file.*

5. In the **Description** text box, enter a unique description (up to 132 characters long) which will be used to identify the connection template for future selection. This description will also appear in the **Open Session** dialog box.
6. Click the **OK** button to save the template settings. If you specified the names of settings files that already exist, a message box will ask you to confirm whether or not you want to overwrite the existing files with the new settings.

## Using Environment Variables To Locate Settings Files

When TeemTalk for Windows 95 or NT is installed on a terminal server, environment variables may be used to locate settings files on the client PC. This means that each client may use a different setup configuration, reading and saving settings locally, instead of changing files stored on the server which would affect all clients.

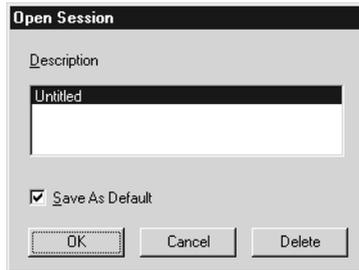
Each client must use the same user environment variable name to specify the directory path for the TeemTalk settings file(s). This name is then specified in the registry on the terminal server, enclosed by % (percentage) characters.

For example, each client has the user environment variable USERPROFILE pointing to a local directory (which may be different on each client). To make the directory specified by USERPROFILE the location of the TeemTalk settings files (**.nv** and **.wsp**), the TeemTalk registry entries on the terminal server would look like this:

```
NvPath: "%USERPROFILE%"  
WsPath: "%USERPROFILE%"
```

## Selecting A Connection Template

The **Open Session** dialog box in the **File** menu enables you to select a connection template for TeemTalk to use.



The **Description** list box displays the one-line descriptions of connection templates that were created using the **Save Session As** dialog box. The description of the connection template currently in use is highlighted. The factory default connection template is **Untitled**. Clicking one of the descriptions then the **OK** button will cause the dialog box to close and TeemTalk to use the connection template associated with the chosen description.

You can make TeemTalk automatically use a particular connection template when it is loaded or reset by clicking the required description, checking the **Save As Default** check box, then clicking the **OK** button. To delete a connection template, select the description then click the **Delete** button.

You can also use the following command line option to override the default connection template used when TeemTalk is loaded:

`-se"description"`

where *description* must exactly match the description assigned to a connection template already saved using the **Save Session As** dialog box. The description must be enclosed by double-quotes.

## Menu Descriptions

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The following pages describe the options available in all the menus and associated dialog boxes. The descriptions begin by showing the menu or dialog box as it is displayed on the screen. The factory default setting is shown below each option title where applicable.

### File Menu



#### Factory Default...

This will make TeemTalk reassert all the original settings that it had when you first installed it. A message box will be displayed asking you to confirm whether or not you want to assert the factory default settings. Click the **OK** button to assert the factory defaults or **Cancel** to cancel the selection.



## Reset Terminal

This will reset the current terminal emulation mode.

## New Connection...

Factory default: Serial, Com 1

This will display a dialog box which enables you to make a serial or network host connection.

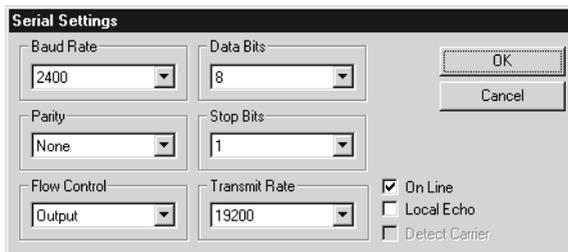


The **Type** option specifies whether a serial or network connection is to be made. Clicking the arrow button will display a drop-down list box containing all the possible settings.

The **Services** option specifies the port or network host node which TeemTalk is to communicate with. This is a text box with an associated drop-down list box. You can either make a selection from the list box or enter a valid host name or internet address in the text box.

## Making A Serial Host Connection

To connect to a serial host, select **Serial** in the **Type** list box (default), then select the **Com** port required in the **Services** list box. Click the **Configure...** button to display the **Serial Settings** dialog box and make sure the settings match that of the host. Click **OK** then click **Connect**.



*Note: These options are described in the Serial Settings section later in this chapter and only apply when the connection type is set to **Serial**.*

The status line along the bottom of the window displays two LEDs. The first LED indicates whether or not you are connected to the host. It will show red when not connected and green when you are connected. The second LED indicates whether or not data is being sent to or from the host. It will show dull green when there is no activity, red when data is being sent to the host, and bright green when data is being received from the host.

### **Making A Network Host Connection**

To connect to a network host node, select the protocol required in the **Type** list box:

TeemTalk for Windows 95 and NT:

|                |                      |                              |
|----------------|----------------------|------------------------------|
| <b>TCP/IP</b>  | <b>CTERM</b>         | <b>WinSock 2</b>             |
| <b>NetBIOS</b> | <b>MultiLan</b>      | <b>ISDN</b>                  |
| <b>LAT</b>     | <b>Microsoft SNA</b> | <b>TeemTalk-OSI (option)</b> |

TeemTalk for Windows 3.1x:

|                    |                     |                        |                    |
|--------------------|---------------------|------------------------|--------------------|
| <b>LAT</b>         | <b>NetBIOS</b>      | <b>B and W. TCP</b>    | <b>INFOConnect</b> |
| <b>FTP PC/TCP</b>  | <b>OSLAN</b>        | <b>WinSock</b>         | <b>ISDN</b>        |
| <b>Sun PC/NFS</b>  | <b>TELAPI</b>       | <b>Ext. NCSI</b>       | <b>DOSLANTI</b>    |
| <b>LAN W/Place</b> | <b>BAPI</b>         | <b>Eicon X25</b>       | <b>MultiLan</b>    |
| <b>NetManage</b>   | <b>Interrupt 14</b> | <b>IPX/SPX</b>         |                    |
| <b>PathWay</b>     | <b>INT6B / NASI</b> | <b>NetWare for LAT</b> |                    |
| <b>CTERM</b>       | <b>LanManager</b>   | <b>TeemTalk-OSI</b>    |                    |

*Note: Refer to the Network Connection chapter in the Networking Guide for a description of each protocol supported and for any additional configuration required prior to making a connection.*

The **Services** list box (in the **New Connection** dialog box) will display the devices on the network which use the currently selected protocol. Click the name of the device required or, in the case of **TELAPI**, enter an Internet address in the text box (for example, **128.127.126.2**). Note that either the host name or IP address may be entered for TCP/IP connections. When **Eicon X25** is selected, TeemTalk requires you to enter a valid address as none will be listed.

The **Telnet Options** button becomes available when a Telnet protocol is selected in the **Type** list box. The dialog box displayed when this button is clicked is described in the next section.

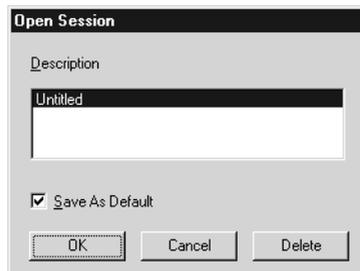
Clicking the **Connect** button or the name of the host in the **Services** list box twice will cause TeemTalk to attempt to connect to the specified host. If a connection cannot be made because the network driver is not installed or the host node name is invalid, an error message will indicate this. Failure to connect for any other reason will result in a **Connection Failed** message.

The status line along the bottom of the window displays two LEDs. The first LED indicates whether or not you are connected to the host. It will show red when not connected and green when you are connected. The second LED indicates whether or not data is being sent to or from the host. It will show dull green when there is no activity, red when data is being sent to the host, and bright green when data is being received from the host.

Connection to the network host node will close if you change the settings in the **New Connection** dialog box and attempt to connect, if you log out of the host, or the host closes the connection. Warning messages will be displayed if the host closes the connection, or you attempt to open a new session or exit TeemTalk while a session is open. These message boxes can be disabled using initialization file commands or command line options. Refer to the *Initialization Commands* chapter for details.

### Open Session...

This enables you to select a connection template for TeemTalk to use. The following dialog box will be displayed.



The **Description** list box displays the one-line descriptions of connection templates that were created using the **Save Session As** dialog box. The description of the connection template currently in use is highlighted. The factory default connection template is **Untitled**. Clicking one of the descriptions then the **OK** button will cause TeemTalk to use the connection template associated with the chosen description.

You can make TeemTalk automatically use a particular connection template when it is loaded or reset by clicking the required description, checking the **Save As Default** check box, then clicking the **OK** button. To delete a connection template, select the description then click the **Delete** button.

### Close Session

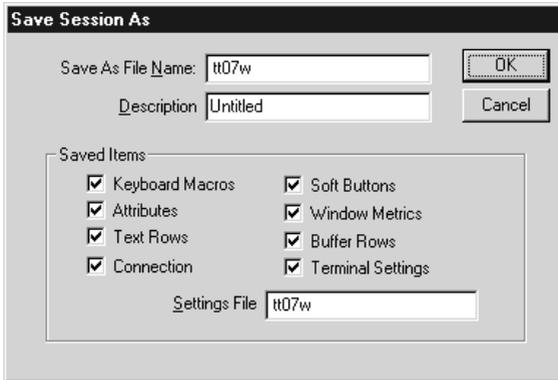
This will close the current session.

### Save Session

Selecting this option will cause the current session configuration to be saved to the connection template specified in the **Save Session As** dialog box.

### Save Session As...

This will display a dialog box which enables you to save the current session configuration as a connection template.



TeemTalk enables you to create multiple connection templates, any one of which can be used either when TeemTalk is loaded or while it is running. The procedure is as follows:

1. In the **Saved Items** box, indicate which user preference settings are to be saved by checking the boxes next to the relevant options.
2. In the **Settings File** text box, specify the name of the terminal emulation settings file (and the directory path if different from the default) which is to store settings only affecting the terminal emulation. The default filename is **tt\*w.nv**, where \* is either **05**, **07** or **11**, depending on your version of TeemTalk.

*Note: There is no need to specify file extensions as defaults are applied when the files are created.*

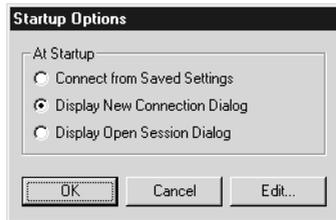
3. In the **Save As File Name** text box, specify the name of the workspace settings file (and the directory path if different from the default) which is to store the user preference settings selected by the **Saved Items** options. The default filename is **tt\*w.wsp**, where \* is either **05**, **07** or **11**, depending on your version of TeemTalk.

*Note: Splitting the saved settings into two files enables users to share a common terminal emulation settings file while allowing each user to have their own workspace settings file.*

4. In the **Description** text box, enter a unique description (up to 132 characters long) which will be used to identify the connection template for future selection. This description will also appear in the **Open Session** dialog box.
5. Click the **OK** button to save the template settings. If you specified the names of settings files that already exist, a message box will ask you to confirm whether or not you want to overwrite the existing files with the new settings.

### Startup Options...

The following dialog box will be displayed when this option is selected.



This enables you specify whether TeemTalk is to make a host connection using the default connection template, display the **New Connection** dialog box, or display the **Open Session** dialog box when it is loaded (but not when it is reset). Refer to the relevant descriptions earlier in this section for information on these dialog boxes.

Clicking the **Edit...** button will open a text editor window in which the contents of the TeemTalk private profile file containing startup settings will be displayed. This enables you to make changes without leaving TeemTalk. (Note that changes will not take effect until the next time TeemTalk is loaded.) The text editor used by default is **notepad.exe**. You can specify a different text editor by modifying the **Editor=** line in the command group headed [**Startup**] in the TeemTalk private profile file.

*Note: Refer to the Initialization Commands chapter for information on the private profile file.*

### Capture File...

This will display a dialog box which enables you to specify the name of a file in which all following data received from the host will be logged.

Clicking the **OK** button after entering the name of the file will cause all data received from the host to be stored in this file until the **Cancel Capture** option (which replaces the **Capture File** option during a capture session) is selected. The contents of this file can be played back later by selecting the **Replay File...** option.

### Replay File...

Factory default: \*.\*

This option will display a dialog box which enables you to replay the contents of a file previously created by the **Capture File...** option.

Enter the name of the file to be replayed in the **Replay File Name** text box, or alternatively select a file name in the list box below, specify whether the replay is directed to the emulation (default) or host, then click the **OK** button.

To cancel a file replay, select the **Cancel Replay** option which replaces the **Replay File** option while a file is being replayed.

### File Transfer...

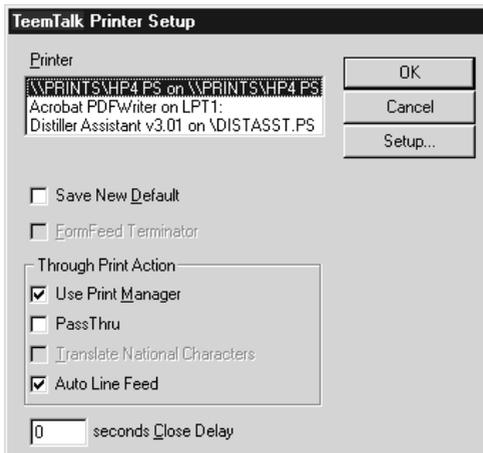
This option provides access to the file transfer utility. Refer to the *File Transfer* chapter for details.

### FTP...

This option provides access to the FTP file transfer utility. Refer to the *FTP File Transfer* chapter for details.

### Printer Setup...

This displays a dialog box which enables you to select *any* printer that is configured in Microsoft Windows instead of just the default printer.



*Note: You can specify a different printer which TeemTalk will use by default instead of that specified in the Control panel by including the printer details on a **device=** line in the initialization file.*

The currently selected printer is the TeemTalk default printer if specified, or the printer specified in the Control panel, when the dialog box is displayed for the first time after TeemTalk is loaded or reset, otherwise it is the printer that was last used.

Selecting a printer other than the default printer will enable the **Save New Default** option. If you click the **OK** button when this option is selected, the currently highlighted printer will become the new default printer. If you want to keep the original printer as the default, uncheck this box before clicking **OK**.

The Microsoft Windows Print Manager normally controls all print formatting, translates host characters to supported printer characters, and also provides a spooling facility. A disadvantage of using the Print Manager is that any print formatting escape sequences received from the host are stripped. The **Through Print Action** options enable you overcome this problem.

If you want to use the Print Manager but disable its print formatting process so that the original escape sequences from the host are retained, select both the **Use Print Manager** and **PassThru** options. (Note that the **PassThru** option will be unselectable if the printer driver currently selected does not support this facility.)

If you want to bypass the Print Manager, deselect the **Use Print Manager** option. The **FormFeed Terminator** and **Translate National Characters** options will become available. Selecting the **FormFeed Terminator** option will cause the printer to advance the paper to the top of the form when it has finished printing. The setting of the **Translate National Characters** option determines whether or not the ISO Latin characters used by Microsoft Windows are translated to IBM characters for the printer.

If you find a through print results in data being split into lines, each treated as a separate print job, specify a time in the **Seconds Close Delay** box (e.g. **5** seconds). This will enable the next line of data to be sent before the print job is assumed to have finished and therefore prevents the print job from being closed prematurely.

When **Auto Line Feed** is selected, every carriage return command will be followed by a line feed command.

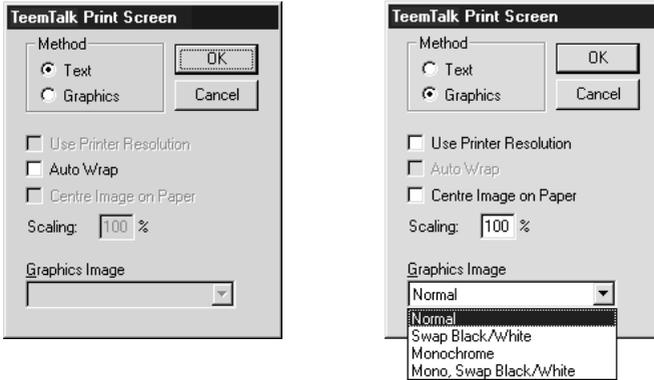
The **Setup...** button enables you to display the Microsoft Windows **Print Setup** dialog box for the currently selected printer. This includes a **Fonts...** button which enables you to change the font settings. The "Courier New" 11 point font will be used by default.

*Note: The **Printer Setup** option will be unselectable if no printer is installed or if the **Status** option in the Microsoft Windows **Printers** dialog box is set to **Inactive**.*

### **Print Screen...**

This will display a dialog box which enables you to produce a hardcopy of data displayed on the screen in a particular format.

The **Text** option is selected by default and the printer resolution and scaling options are not accessible. Clicking the **OK** button with **Text** selected will cause a fast print of the screen using ASCII text codes, therefore any graphics displayed in the TeemTalk client area will not be printed.



*Note: The virtual key name VT\_PRINT will also cause this dialog box to be displayed.*

Selecting **Graphics** will print all the data in the TeemTalk client area, both graphics and text, when the **OK** button is clicked. The hardcopy output will be an almost exact representation of the client area. Note that a graphics print will take a lot longer than a text print.

The **Use Printer Resolution** option is available when **Graphics** print is selected. This will force a dot for dot print of the screen on the printer and generally produces a small print, depending on the printer resolution. When this option is not selected (unchecked), TeemTalk will try and print as large an image as possible on the printer's paper. Both methods can print in landscape or portrait format, depending on the current setup of the printer.

The **Centre Image on Paper** option is available when **Graphics** print is selected. This will ensure that the graphics image is printed centrally on the paper.

The **Scaling** option is available when **Graphics** print is selected. This enables the image to be scaled to suit your preference. When the **Use Printer Resolution** option is selected, you can scale the image up, and when unselected you can scale the image down. (Scaling up when **Use Printer Resolution** is *not* selected may result in loss of some of the image.)

The **Graphics Image** option is available when **Graphics** print is selected. This enables you to specify how the graphics image is to be printed. Clicking the arrow button next to the text box will cause four print options to be displayed.

These options allow you to print the graphics image as displayed (**Normal** by default), with black and white reversed, with colour converted to monochrome, or colour converted to monochrome with black and white reversed.

Once a screen print is initiated by clicking **OK**, another dialog box will be displayed while the screen data is being spooled out to the print manager. This enables you to terminate the print process before data is actually printed.

### Print Buffer

This will send a copy of all the data contained in the window buffer to the currently selected printer.

### Auto Print

This toggles auto print mode on and off, as indicated by a tick when auto print mode is on. Auto print mode causes each line of data to be transmitted to the printer when the cursor moves to a new line as a result of a carriage return, line feed, vertical tab, or form feed.

### Cancel Print

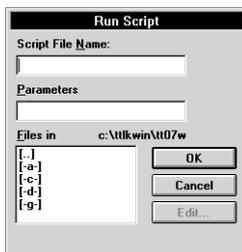
This will cancel the current **Print Screen** or **Print Buffer** function.

### Eject Page

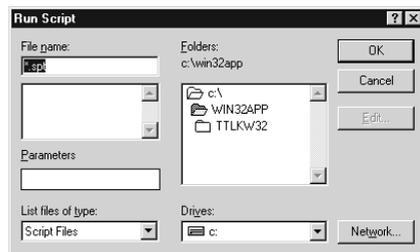
When TeemTalk is in Auto Print or Printer Controller mode and the **Use Print Manager** option in the **Printer Setup** dialog box is checked, this option enables data that has been spooled to the printer to be printed. This option will be greyed (unselectable) when TeemTalk is not in Auto Print or Printer Controller mode.

### Run Script...

This will display a dialog box which enables you to run a script file.



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The name of the file is entered in the **Script File Name** text box, or alternatively you can select a file name in the list box below.

The **Parameters** text box enables you to specify the values of **ArgV#** type variables within the script file, if required. Values are separated from each other by a comma. You must ensure that the values are entered in the right order so that they are assigned to the correct variables. Refer to the *Initiating A Script File* section in the *Creating A Script File* chapter for details.

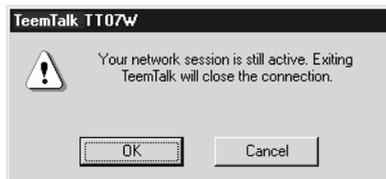
*Note: If the values to be entered include sensitive data, such as a password, you can cause the text to be displayed as asterisks instead of normal text by using the **-hs** command line option or **scriptparameter=off** initialization file command.*

When the name of the script file has been specified and any parameters entered, click the **OK** button to run the script file. To cancel a script file, select the **Cancel Script** option which replaces the **Run Script** option while a file is being run.

The **Edit...** button becomes active when you select the name of a script file. Clicking the **Edit...** button will open a text editor window in which the contents of the selected script file will be displayed. This enables you to make changes without leaving TeemTalk.

### Exit

This option will cause TeemTalk to shut down. If you attempt to exit TeemTalk while a network session is still active, the following message box will be displayed:



This message box can be disabled so that the connection is automatically closed when TeemTalk is exited by using the **-J** command line option or entering the line **warnExit=off** in the initialization file.

## Telnet Options

The screenshot shows a dialog box titled "Telnet Options". At the top, there are two text input fields: "Port Number" with the value "23" and "Telnet Name" with the value "tek4207". Below these are several sections of controls:

- Suppress:** A group box containing four checkboxes: "Echo", "3270 Regime", "TN3270E", and "TN5250E".
- Force Negotiation:** A group box containing two dropdown menus: "Binary" (set to "no") and "EQR" (set to "no").
- Break Settings:** A group box containing two checkboxes: "TM with Break" (checked) and "CR with Break" (unchecked).

On the right side of the dialog, there are two buttons: "3270 Options" and "5250 Options". At the bottom, there are "OK" and "Cancel" buttons.

This dialog box is displayed when you click the **Telnet Options** button in the **New Connection** dialog box when any Telnet protocol is selected in the **Type** list box. Note that the options available and the default settings depend on the current terminal emulation. The '**3270**' and '**5250**' options are not applicable to this version of TeemTalk.

*Note: Many of these settings can be specified in the TeemTalk private profile file. Refer to the Initialization Commands chapter for details.*

### Port Number

This enables you to specify the Telnet port number. The default Telnet port number, **23**, can be substituted with any valid 16 bit port number. Specifying a number outside the valid range will cause the setting to default to 1.

### Telnet Name

This enables you to override the name that will be reported for the terminal type over Telnet.

### Suppress Echo

When selected, this will prevent the emulator from generating the Telnet echo option on connection.

### Force Negotiation

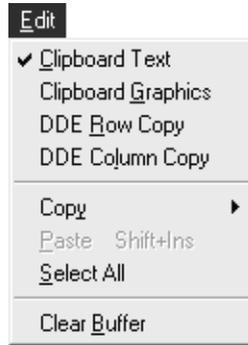
These settings determine whether or not the Telnet Binary or EOR options are supported. Both are set to **no** by default.

- No** Will not force any negotiations. It will leave it up to the host to decide what to do.
- DO** Will force negotiation. The host will be informed that the option is supported.
- DONT** Will force negotiation. A negotiation packet will be sent to the host telling it that the option is not supported.

### Break Settings

The setting of these options determine whether or not a timing mark (**TM**) and/or carriage return (**CR**) is sent with a Telnet break packet. A timing mark is sent by default.

## Edit Menu



### Clipboard Text Clipboard Graphics

Selecting one of these options will enable selected text or graphics to be copied to the clipboard when the **Copy** command is used. The **Paste** and **Select All** commands will also be enabled. A tick will be displayed next to the option when it is selected and the DDE commands will be disabled.

### DDE Row Copy DDE Column Copy

Dynamic Data Exchange (DDE) is a much more powerful tool than the clipboard as it establishes a link between the copied data and the original source data so that when changes occur to the source data, the copied data can be updated automatically so that you do not have to copy and paste the data again. A tick will be displayed next to the option when it is selected and the **Paste** command will be disabled.

The **DDE Row Copy** and **DDE Column Copy** options enable selected data to be copied in a format suitable for applications which use cells to store information, such as spreadsheets. When the **Copy** command is used, selected data will be copied so that each line is treated as a separate cell.

The way in which each cell of data is inserted in the application's worksheet when pasted is determined by whether the **DDE Row Copy** or **DDE Column Copy** option was selected before the **Copy** command was used. **DDE Row Copy** will enable each line of copied data to be pasted in a row of selected cells, and **DDE Column Copy** will enable each line of copied data to be pasted in a column of selected cells.

*Note: Refer to the Dynamic Data Exchange chapter for more information.*

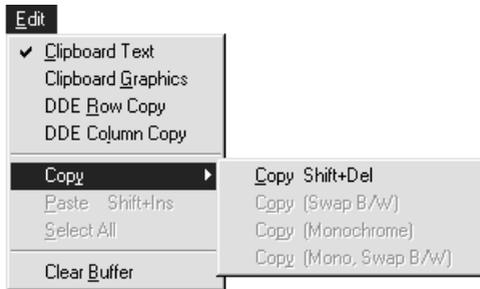
## Copy

This command becomes available (ungreyed) when data has been selected. The function of this command is determined by whether the **Clipboard Text**, **Clipboard Graphics**, **DDE Row Copy** or **DDE Column Copy** option is selected.

When the **Clipboard Text** or **Clipboard Graphics** option is selected, this command will cause currently selected text or graphics to be copied to the clipboard. The data can then be inserted in a different position or another file using the **Paste** command. The next block of data that is copied will delete the previous block on the clipboard.

When **DDE Row Copy** or **DDE Column Copy** is selected, various commands representing the selected screen area will be copied to the clipboard. These commands can be pasted to an appropriate area of the screen by another Windows application that can interpret the commands, for example, Microsoft Excel. DDE messages will be exchanged between TeemTalk and the application in which the commands were pasted and, if acknowledged positively by both parties, an automatic update will be performed from TeemTalk to the application if data in the selected area changes.

To use the **Copy** option, hold down the left mouse button and move the pointer across to the right to display additional options, as shown below.



The first option enables you to perform a standard copy. Pressing the keys **Shift + Delete** together will perform the same function. The last three options are only available when **Clipboard Graphics** is selected. They enable you to copy the graphics image with black and white reversed, with colour converted to monochrome, or both.

*Note: A standard copy can also be performed by clicking the middle mouse button on a 3-button mouse, or the right button on a 2-button mouse.*

## Paste

This only functions when the **Clipboard Text** or **Clipboard Graphics** option is selected and will cause data that has been copied to the clipboard to be pasted at the

current cursor position. The same block of data may be pasted repeatedly as the clipboard stores it until the **Copy** command is used again.

*Note: The same function can be performed by clicking the right mouse button on a 3-button mouse, or **Shift + Left or Right Button** on a 2-button mouse, or by pressing the keys **Shift + Insert**.*

### **Select All**

This will cause the window contents (not the entire buffer) to be selected.

### **Clear Buffer**

This will erase the contents of the window and the scroll buffer.

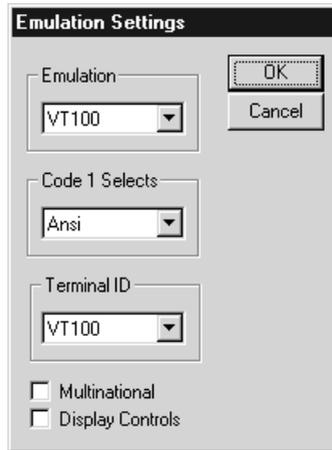
## Settings Menu



The following dialog boxes can be displayed from this menu:

- Emulation Settings** - for specifying the terminal emulation, terminal identity and displayable characters.
- Serial Settings** - for specifying serial communication settings.
- Terminal Settings** - for specifying terminal and keyboard settings.
- Dialog Settings** - for specifying the text window format, buffer size and cursor movement.
- Gin Settings** - for configuring TeemTalk for compatibility with the attached GIN device.
- Attributes** - for assigning colours and specifying how characters with attributes are displayed.
- Keyboard Macros** - for remapping the keyboard and defining the function of keys.
- Soft Buttons** - for defining soft button functions.
- Mouse Button Actions** - for defining mouse button functions.
- Button Tools** - for defining the toolbar/floating button palette.

## Emulation Settings



This dialog box is displayed by selecting **Emulation** in the **Settings** menu.

### Emulation

Factory default: VT100

The setting of this option determines the current terminal emulation mode.

**VT52** and **VT100** modes enable you to run applications written for the DEC VT52 and VT100 terminals, respectively.

**Tek** mode provides compatibility with software designed to drive the Tektronix 4100 or 4200 series terminals. Emulation of the Tektronix 4014 terminal can be achieved by selecting this option and setting the **Dialog Area Enabled** option in the **Dialog Settings** dialog box to **0**.

**Edit** mode provides compatibility with software designed to drive the DEC VT100 terminal. In this mode the following features are set to pre-determined conditions:

- A. The dialog area is enabled and visible.
- B. The dialog area buffer and scrolling region are set to 24 lines.
- C. Cursor origin mode is set to Absolute (refer to the description of the **Cursor Origin** option in the **Dialog Settings** dialog box).
- D. Insert/Replace character mode is set to Replace.
- E. Keys **PF1** through **PF4** generate ANSI cursor movement sequences.
- F. All programmed strings for keys are temporarily disabled.

**VT220-7** and **VT220-8** modes run emulations of the DEC VT220 terminal, the difference is in their treatment of 8-bit control codes. When **VT220-7** is selected, all 8-bit codes are converted to their 7-bit equivalents, whereas **VT220-8** leaves 8-bit codes unchanged. If you are using VT200 applications, select **VT220-7**.

**W3220** mode provides compatibility with software designed to drive the Westward 3220 terminal.

### Code 1 Selects

Factory default: ANSI

The setting of this option determines what action will be taken on receipt of an 'Enter ANSI Mode' (Code 1) command from the host. It can be set to cause entry to the DEC VT220 7 or 8-bit emulation instead of ANSI (VT100). This provides the same functionality as the Tektronix **DecTerminal** command.

### Terminal ID

Factory default: VT100

This option identifies the particular 'VT' terminal model emulated by TeemTalk in response to a terminal identification request from the host when in any mode except Tek.

### Multinational

Factory default: Unselected

The setting of this option determines whether the national or multinational character set is used when TeemTalk is in VT220 7 or 8-bit Alpha mode. (All other modes use the national character set.)

When this option is unselected, the national character set which corresponds to the keyboard language selected in the **Terminal Settings** dialog box will be used. Only characters found in this character set may be generated.

When this option is selected, the multinational character set will be used. This consists of the 7-bit ASCII character set and the 8-bit VT220 Additional character set (as shown in the *Character Sets* appendix). This enables characters from all national character sets to be generated.

### Display Controls

Factory default: Unselected

The setting of this option determines whether received control codes are actioned or displayed. When selected, a representation of most control codes will be displayed on the screen.

## Serial Settings

The screenshot shows a 'Serial Settings' dialog box with the following configuration:

- Baud Rate:** 2400
- Data Bits:** 8
- Parity:** None
- Stop Bits:** 1
- Flow Control:** Output
- Transmit Rate:** 19200
- On Line:**
- Local Echo:**
- Detect Carrier:**

This dialog box is displayed by selecting **Serial** in the **Settings** menu, or by clicking the **Configure...** button in the **New Connection** dialog box when the connection type is set to **Serial** or **Interrupt 14**. Note that the port for serial communications is selected via the **New Connection** dialog box which is displayed from the **File** menu.

### Baud Rate

Factory default: 2400

This specifies the transmit and receive baud rates for the port selected for host communications.

### Parity

Factory default: None

This option specifies the parity mode for each transmitted character. If the number of **Data Bits** is **8**, set this option to **None**.

Selecting **Odd** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an even number, and 0 if the previous 7 bits add up to an odd number. Selecting **Even** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an odd number, and 0 if the previous 7 bits add up to an even number. **Mark** parity will set every eighth bit to 1 and **Space** parity every bit to 0.

### Flow Control

Factory default: Output

This option specifies the type of flow control used by the line port to communicate readiness to transmit or receive data from the host.

- None** - No flow control
- Input** - XON/XOFF on received data
- Output** - XON/XOFF on transmitted data

**In/Out** - XON/XOFF on transmitted & received data

**Hardware** - DTR/CTS hardware flow control.

### Data Bits

Factory default: 8

This option specifies the number of data bits sent for each transmitted character.

### Stop Bits

Factory default: 1

This specifies the number of stop bits sent for each transmitted character.

### Transmit Rate

Factory default: Unlimited

The setting of this option determines the maximum effective baud rate that TeemTalk transmits terminal reports and data sent as a result of pasting data to the host.

### On Line

Factory default: Selected

When this option is selected, normal two-way communication between TeemTalk and the host is enabled. When unselected, TeemTalk is in Local mode and data will not be sent to, or received from the host. Data typed on the keyboard will be displayed on the screen or actioned if a control command is typed.

### Local Echo

Factory default: Unselected

The setting of this option determines whether keyboard entered characters are displayed on the screen as well as sent to the host. When unselected, characters are not displayed when they are transmitted unless the host 'echoes' them back.

### Detect Carrier

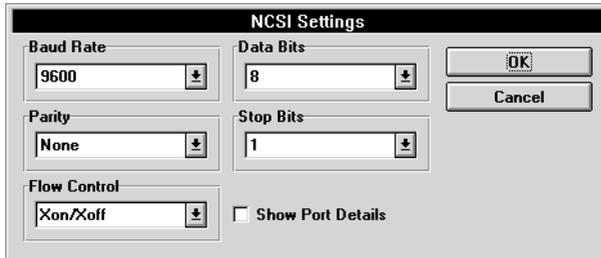
Factory default: Unselected

This option is only valid if the script command **PSET HOST DCDDTECT YES** has been specified (refer to the *Creating A Script File* chapter for details).

When this option is selected, TeemTalk will check to see whether a modem connection is running. If the **DCDDTECT** command is not specified or set to **NO**, the check will always be true.

*Note: The script command **PGET HOST DCDTEST** can be used to test whether DCD was present when the last character was sent.*

## NCSI Settings



The screenshot shows a dialog box titled "NCSI Settings". It contains the following controls:

- Baud Rate:** A dropdown menu with "9600" selected.
- Data Bits:** A dropdown menu with "8" selected.
- Parity:** A dropdown menu with "None" selected.
- Flow Control:** A dropdown menu with "Xon/Xoff" selected.
- Show Port Details:** An unchecked checkbox.
- Buttons:** "OK" and "Cancel" buttons are located on the right side.

This TeemTalk for Windows 3.1x dialog box is displayed by clicking the **Configure...** button in the **New Connection** dialog box when the connection type is set to **Extended NCSI**.

### Baud Rate

Factory default: 9600

This specifies the transmit and receive baud rates in the range 50 to 115200 baud.

### Parity

Factory default: None

This option specifies the parity mode for each transmitted character.

If the number of **Data Bits** is **8**, set this option to **None**.

Selecting **Odd** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an even number, and 0 if the previous 7 bits add up to an odd number.

Selecting **Even** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an odd number, and 0 if the previous 7 bits add up to an even number.

**Mark** parity will set every eighth bit to 1 and **Space** parity every bit to 0.

### Flow Control

Factory default: Xon/Xoff

This option specifies the type of flow control used to communicate readiness to transmit or receive data from the host. It can be set to **None**, **DTR**, **RTS**, **DTR/RTS** or **Xon/Xoff**.

### **Data Bits**

Factory default: 8

This option specifies the number of data bits sent for each transmitted character.

### **Stop Bits**

Factory default: 1

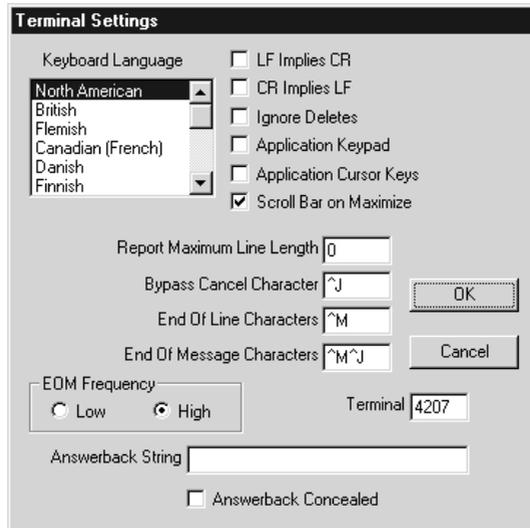
This specifies the number of stop bits sent for each transmitted character.

### **Show Port Details**

Factory default: Unselected

By default the **Services** list box will show the server name and general service (e.g. VAX or modem) but not the port name. If the server has two or more of the same type of service connected, for example two modems, then you can have the port name displayed as well by selecting this option.

## Terminal Settings



This dialog box is displayed by selecting **Terminal** in the **Settings** menu.

### Keyboard Language

This option enables you to specify the nationality of the keyboard being used. It is important that this is correct otherwise the characters displayed may not match the key legends.

When running TeemTalk for Windows 3.1x, the factory default keyboard nationality is determined by the **Keyboard Layout** setting in the **International** dialog box within the Microsoft Windows **Control Panel**. You can specify a different nationality while TeemTalk is running and save it so that it is reasserted each time TeemTalk is loaded or reset. When you exit TeemTalk the keyboard nationality will revert back to that specified in the **International** dialog box.

When running TeemTalk for Windows 95 or NT, the factory default keyboard nationality is determined by the system locale setting. You can specify a different nationality while TeemTalk is running and save it so that it is reasserted each time TeemTalk is loaded or reset. When you exit TeemTalk the keyboard nationality will revert back to that specified in the locale.

### LF Implies CR

Factory default: Unselected

When selected, this will cause TeemTalk to interpret each line feed character it receives as a line feed and carriage return pair.

### **CR Implies LF**

Factory default: Unselected

When selected, this will cause TeemTalk to interpret each carriage return character it receives as a carriage return and line feed pair.

### **Ignore Deletes**

Factory default: Unselected

The setting of this option determines whether TeemTalk ignores or actions delete characters received from the host.

### **Application Keypad**

Factory default: Unselected

The setting of this option determines the effect of pressing keys in the keypad on the right side of the keyboard.

When unselected, the keypad is in numeric mode and keys will generate the characters shown on the key caps. When selected, the keypad is in application mode and keys will generate control functions when pressed.

*Note: On some keyboards the keypad acts as both a numeric keypad and a cursor key block depending on the setting of some modifier, such as the **Num Lock** key. This option only affects the characters generated when the keypad is acting as a numeric keypad.*

### **Application Cursor Keys**

Factory default: Unselected

When this option is selected the cursor keys will generate application program codes when pressed. Unselected, the keys will generate normal cursor movement commands.

*Note: On some keyboards the keypad acts as both a numeric keypad and a cursor key block depending on the setting of some modifier, such as the **Num Lock** key. This option only affects the characters generated when the keypad is acting as a cursor key block.*

### **Scroll Bar on Maximize**

Factory default: Selected

The setting of this option determines whether or not a scroll bar is displayed when the window is maximized.

## Report Maximum Line Length

Factory default: 0

The setting of this option determines the maximum number of characters per line for reports sent to the host. The numeric value must be in the range 0 through 65535. This feature is disabled if **0** is specified.

## Bypass Cancel Character

Factory default: ^J (LF)

This option sets the bypass mode cancellation character. Bypass mode is entered when TeemTalk sends a report to the host so as to prevent reports echoed by the host being actioned by TeemTalk. All characters subsequently received from the host are discarded until the terminal receives the bypass cancel character, after which it resumes processing received data.

If the host does not echo, then bypass mode can be disabled by specifying the character as **NULL** (ASCII decimal 00) in one of the ways described in the following paragraphs. Otherwise, set the bypass character to the last character that the host sends when it echoes a line of text.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character. For example, the default ASCII character **LF** can be entered by typing the characters **^** and **J**, representing the keys **Ctrl + J** which, when pressed together would generate the **LF** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **LF** is 10, so this would be entered as **\_010**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

## End Of Line Characters

Factory default: ^M (CR)

This option is used to specify up to two ASCII characters in the decimal range 0 through 127 which are sent by TeemTalk at the end of reports sent to the host.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character. For example, the default character **CR** can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

### End Of Message Characters

Factory default: ^M (CR) and ^J (LF)

This option is used to specify up to two ASCII characters in the decimal range 0 through 127 which are sent by TeemTalk to end a line of data transmission.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character. For example, the ASCII character **LF** can be entered by typing the characters **^** and **J**, representing the keys **Ctrl + J** which, when pressed together would generate the **LF** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **LF** is 10, so this would be entered as **\_010**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

### EOM Frequency

Factory default: High

The end of message frequency specifies how often TeemTalk inserts end of line strings into reports that it sends to the host.

### Terminal

Factory default: 4207

The setting of this option determines the extent of control over text displayed in the graphics area. Specifying **4105** will cause the Tek emulation to use string precision text only, whereas **4207** or **4111** (depending on your version of TeemTalk) will allow both string and stroke precision text. String precision text only consists of alpha mode fonts. Stroke precision allows both alpha and user-defined fonts to be displayed, and provides greater precision when slanting, rotating or sizing the text.

### Answerback String

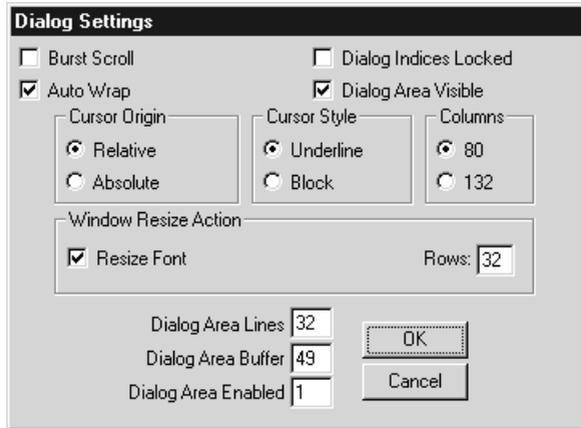
This option enables you to specify the Answerback string that is sent to the host in response to an ANSI mode enquiry command. The string may be up to 30 characters long.

### Answerback Concealed

Factory default: Unselected

Selecting this option will cause the Answerback string specified in the text box above to be locked from change and displayed as asterisks. Note that deselecting this option will cause the Answerback string to be deleted.

## Dialog Settings



This dialog box is displayed by selecting **Dialog** in the **Settings** menu.

### Burst Scroll

Factory default: Unselected

The setting of this option determines whether data is scrolled one or several lines at a time when the window becomes full. Data will scroll up several lines at a time when this is selected.

### Auto Wrap

Factory default: Selected

This option determines whether characters wrap to the next line when the right margin is reached. When unselected, on reaching the right margin, the last character position will be overwritten by every new character received until a command positions the cursor at a different location.

### Dialog Indices Locked

Factory default: Unselected

Selecting this option will prevent the host from changing the current colour settings of the dialog area.

In some circumstances the dialog indices may have to be locked to prevent the text becoming unreadable due to clashes between the character foreground colour and the background colour. This is because TeemTalk does not have a separate dialog and graphic colour map.

### Dialog Area Visible

Factory default: Selected

This option enables you to make the dialog area visible or invisible.

### Cursor Origin

Factory default: Relative

The setting of this option defines the relationship between the cursor position and the emulation workspace.

When this option is set to **Absolute**, the cursor position is calculated using the first column and row of the emulation workspace as its origin, so allowing addressing outside the current text scrolling region.

When set to **Relative**, the cursor position is calculated using the first column and row of the current text scrolling region as its origin. Cursor movement is restricted to the scrolling region.

### Cursor Style

Factory default: Underline

This option enables you to specify how the text cursor is displayed, either as an underline character or a block.

### Columns

Factory default: 80

This option enables you to specify a width of 80 or 132 columns for the dialog area.

### Resize Font

Factory default: Selected

This option determines the effect on displayed text when the window is resized.

When selected, resizing the window will cause TeemTalk to search a list of known fonts and select the one that allows the same number of rows (specified by the next option) and columns to fill the new window size. The window will be adjusted to display all the rows.

When unselected, resizing the window will have no effect on the font size and the number of displayed rows will be increased or decreased according to the new window size. Note that the number of columns will remain set to 80 or 132 even though the window may be wider, leaving a margin on the right.

### Rows

Factory default: 32

This option determines the total number of text rows that may be displayed in the window, which can be set to a maximum of 64. TeemTalk will search a list of known fonts and select the one that allows all the specified rows to be displayed in the

window. The window size will be adjusted accordingly. Note that the number of text rows actually used for displaying dialog area text is determined by the setting of the **Dialog Area Lines** option.

### **Dialog Area Lines**

Factory default: 32

This option defines how many lines of the dialog buffer are visible on the screen in the dialog area. The size of the text window (see **Rows**) and dialog buffer (see **Dialog Area Buffer**) determines the maximum number of lines that can be displayed. The minimum number of lines that can be displayed is 2.

### **Dialog Area Buffer**

Factory default: 49

This option specifies the size of the buffer which is used to store text for display in the dialog area. The number of lines specified must be in the range 2 through 100.

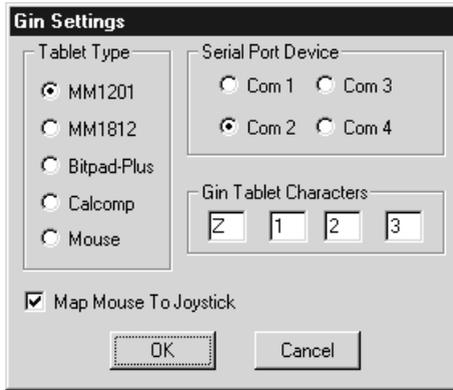
### **Dialog Area Enabled**

Factory default: 1

The dialog area is a region on the screen in which text stored in the dialog area buffer can be displayed. This option specifies whether the dialog area is enabled or disabled. The dialog area is enabled when set to 1 and disabled when set to 0.

In VT52, VT100 and Edit mode, text is automatically placed in the dialog area regardless of whether or not the area is enabled. In Tek mode with the dialog area enabled, all alphanumeric text is placed in the dialog area buffer. In Tek mode with the dialog area disabled, text is placed in the graphics area at the current graphics position. This gives an emulation of the Tektronix 4014 terminal which does not support an equivalent of the dialog area. In Primary Setup mode, all text entered from the keyboard is displayed in the dialog area.

## Gin Settings



This dialog box is displayed by selecting **Gin** in the **Settings** menu.

### Tablet Type

Factory default: MM1201

This option specifies the graphics input device that is attached to your system and the data format that TeemTalk uses to communicate with it.

TeemTalk incorporates several tablet drivers. The following list includes the baud rate, data bits, stop bits and parity settings that are automatically set for the tablet type selected.

|                    |  |
|--------------------|--|
| <b>MM1201</b>      | Summagraphics MM1201<br>(9600, 8, 1, Odd)  |
| <b>MM1812</b>      | Summagraphics MM1812<br>(9600, 8, 1, Odd)  |
| <b>Bitpad-Plus</b> | Summagraphics Bitpad-Plus<br>(9600, 7, 1, Even)  |
| <b>Calcomp</b>     | Calcomp (16 button)<br>(9600, 7, 1, Even)  |
| <b>Mouse</b>       | Mouse<br>(Uses the communication settings specified<br>in the <b>Serial Settings</b> dialog box) |

### Serial Port Device

Factory default: Com 2

This option specifies the serial port to which the Gin device is attached.

### **Gin Tablet Characters**

Factory default: Z123

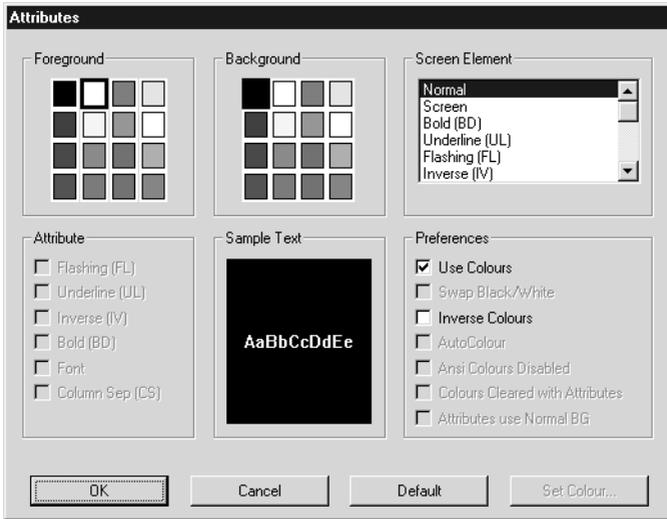
This option specifies the characters sent by the buttons on the mouse or tablet puck for Gin pick and locate operations. The setting must consist of four characters or no characters. For a mouse which only has three buttons, the first character is ignored and subsequent characters correspond to the left, middle and right buttons.

### **Map Mouse To Joystick**

Factory default: Enabled

When this option is selected, any Gin operations which enable or disable the joystick or keyboard cursor keys will also enable or disable the mouse.

## Attributes



This dialog box is displayed by selecting **Attributes** in the **Settings** menu. It enables you to specify the colours used in the dialog area and how text with attributes is displayed.

To change the way a screen element is displayed, select the relevant item from the **Screen Element** list box, for example, **Bold (BD)** for characters with the bold attribute. The settings of the other options in the dialog box will change to reflect the settings currently assigned to the screen element, and the **Sample Text** window will show how the screen element is actually displayed with these settings.

Text with attributes can be displayed in various ways. For example, characters with the underline attribute can be displayed as standard (e.g. underlined only), as a particular colour only (e.g. green without the underline), or with both attribute and a specific colour (e.g. underlined and green). The **Attribute** options allow you to enable or disable any of the attributes normally associated with the currently selected screen element. The setting of the **Use Colours** option determines whether or not a specific colour is assigned to the text attribute.

When the **Use Colours** option is selected, the colour of the screen element can be changed by clicking on the required colour block in the palette of **Foreground** and/or **Background** colours. The two palettes enable you to specify a different colour for text (foreground) and text cell (background). The set of 16 colours displayed can be customized using the **Colour Palette** dialog box which is described later.

The following sections describe items in the **Attributes** dialog box in more detail.

## Screen Element

This list box enables you to select the screen element for definition.

|                 |       |             |
|-----------------|-------|-------------|
| Normal          | UL+BD | FL+BD+UL    |
| Screen          | FL+BD | IV+UL+BD    |
| Bold (BD)       | FL+UL | IV+FL+BD    |
| Underline (UL ) | IV+FL | IV+FL+UL    |
| Flashing (FL)   | IV+BD | IV+FL+BD+UL |
| Inverse (IV)    | IV+UL |             |

## Attribute

The list of attribute options allow you to enable or disable the actual display of attributes associated with the selected screen element. Text with the bold attribute may be displayed as such by checking the **Font** box when the **Screen Element** is set to one of the bold options. Note that text display will be slower when **Font** is selected to display characters with the bold attribute as bold instead of a substitute colour.

## Use Colours

When selected, the currently selected screen element will be displayed in the colours highlighted in the **Foreground** and **Background** colour palettes. For default display, deselect this option.

## Swap Black/White

Factory default: Unselected

This option is not applicable to TeemTalk-05W, -07W or -11W and will therefore be unselectable.

## Inverse Colours

Factory default: Unselected

When this option is selected, characters with the inverse attribute will have the text (foreground) colour swapped with that of the text cell (background).

## AutoColour

Factory default: Unselected

This option is not applicable to TeemTalk-05W, -07W or -11W and will therefore be unselectable.

## Ansi Colours Disabled

Factory default: Unselected

This option is not applicable to TeemTalk-05W, -07W or -11W and will therefore be unselectable.

### Colours Cleared With Attributes

Factory default: Unselected

This option is not applicable to TeemTalk-05W, -07W or -11W and will therefore be unselectable.

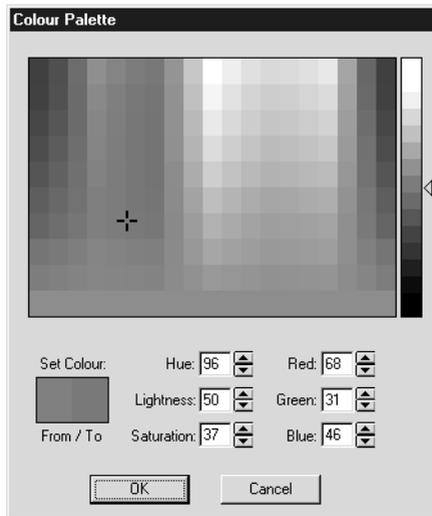
### Attributes Use Normal BG

Factory default: Unselected

This option is not applicable to TeemTalk-05W, -07W or -11W and will therefore be unselectable.

## Customizing The Colour Selection

You can change any of the 16 colours displayed in the **Foreground** and **Background** colour selection boxes. To do this, select the colour you wish to change in one of the selection boxes then click the **Set Colour...** button to display the **Colour Palette** dialog box.



This provides two methods for specifying a different colour, one visual and the other numeric. All the settings initially displayed relate to the colour selected in the **Attributes** dialog box. When you start changing any of the settings, the **Set Colour** box will display the original colour on the left and the new colour on the right.

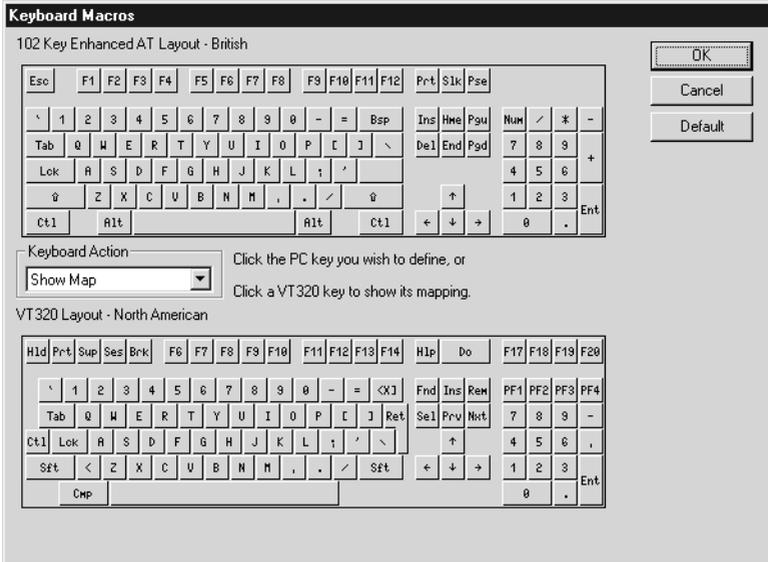
## Visual Method

The full range of colours available is displayed in the large colour selection box. A target cursor is positioned over the currently selected colour. To select a new colour you can either click the mouse pointer over the colour required or drag the target cursor over it. The right hand colour of the **Set Colour** box will change accordingly. The lightness of the selected colour can be altered by dragging the triangular pointer up or down the vertical bar to the right. When you have finished, click **OK** to apply the change or **Cancel** to cancel it and return to the **Attributes** dialog box.

## Numeric Value Method

The numeric value of **Hue**, **Lightness** and **Saturation**, or the **Red**, **Green** and **Blue** percentage values can be entered directly in the text boxes or you can click the arrow buttons to cycle through the numeric values. The right hand colour of the **Set Colour** box will change accordingly. When you have finished, click **OK** to apply the change or **Cancel** to cancel it and return to the **Attributes** dialog box.

## Keyboard Macros



This dialog box is displayed by selecting **Keyboard Macros** in the **Settings** menu.

The **Keyboard Macros** dialog box enables you to redefine the function of most of the keys on your keyboard and shows the mapping of the keyboard for the current terminal emulation mode.

Two keyboard layouts are displayed. The upper layout corresponds to the keyboard you are using, which will be one of the following: 101 key, 102 key, 84 key, Digital's LK250 or LK450, or KEA Systems' PowerStation, depending on the type specified within Microsoft Windows Setup for your PC.

*Note: When an LK250, LK450 or PowerStation keyboard driver is loaded, the **SYSTEM.INI** file is scanned by TeemTalk to see if the string "LK250", "LK450" or "PowerStation" is present and maps the keyboard accordingly.*

The lower layout represents the keyboard associated with the terminal currently being emulated, as specified in the **Emulation Settings** dialog box.

## Keyboard Mapping

You can show how TeemTalk has mapped your keyboard within the current terminal emulation mode by setting the **Keyboard Action** option (between the two layouts) to

**Show Map**, then moving the pointer over a key in the *lower* layout and holding down the left mouse button. The key or key combination which emulate the function of the key you are currently pressing will be displayed in the *upper* layout as if pressed in.

*Note: Control key functions are not shown.*

TeemTalk provides two quick and easy ways of changing the default keyboard mapping to suit your requirements.

## Remapping Normal Key Functions

The following method is suitable when the function to be remapped does not require a combination of keys to be pressed to action it. For example, you can make the **F1** key on your keyboard emulate the **Insert** key of the terminal keyboard being emulated, but you cannot specify that pressing the keys **Alt + F1** together will perform the **Insert** key function.

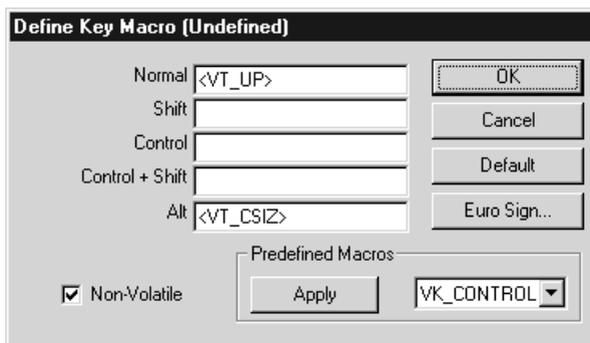
First, set the **Keyboard Action** option to **Map Key**, click the key in the *lower* layout showing the legend of the function required, then click the key in the *upper* layout which you want to assign that function to.

Note that you will now have two keys which emulate the same function, the default mapping and the mapping you have just specified. You can either leave them this way or assign a new function to the key which was mapped by default.

## Remapping Key Combination Functions

The following method is suitable for both normal key functions and key combination functions. For example, you can map the **Insert** key function to the **F1** key on your keyboard, and you can make the keys **Alt + F1** emulate the **Help** key when pressed together.

First, click the key in the upper layout (representing your keyboard) to which you want to assign a function. The **Define Key Macro** dialog box will be displayed, as shown below. This example shows how the **F1** key is mapped by default.



The **Predefined Macros** option at the bottom of this dialog box enables you to select from a list of standard functions associated with the current terminal emulation. Clicking the arrow button will display a list box in which the names of valid key functions (called *virtual key names*) are shown.

*Note: The Virtual Key Names appendix lists all the functions and associated virtual key names for each terminal emulation.*

Before making a selection from this list box, click the pointer in the text box next to the key combination that will be required to perform the function, that is, **Normal** (key pressed on its own), **Shift** (key shifted) etc. For example, to assign the **Help** key function to the key combination **Alt + F1**, click the pointer in the text box next to **Alt**, display the **Predefined Macros** list box and scroll through the selection until **VT\_HELP** is displayed, click the pointer on it then click the **Apply** button. The current function of the **Alt + F1** key combination will be replaced with the **Help** function, indicated in the text box by **<VT\_HELP>**. If you want the mapping of this key to be saved when you perform a **Save Session**, make sure the **Non-Volatile** box is checked. Click the **OK** button to activate the change and close the dialog box. Note that you will now have two keys which emulate the same function, the default mapping and the mapping you have just specified. You can either leave them this way or assign a new function to the key which was mapped by default.

When you have finished remapping the keyboard, click the **OK** button in the **Keyboard Macros** dialog box to close it and cause TeemTalk to assert the changes. You can save the new keyboard mapping so that TeemTalk will reassert it each time it is loaded or reset by displaying the **Save Session As** dialog box, selecting the **Keyboard Macros** option, then clicking the **OK** button.

## Programming A Key

Most of the keys on the keyboard may be programmed with up to five definitions each. Keys that cannot be redefined include **Shift**, **Caps Lock**, **Alt**, **Alt Gr** and **Print Screen**. Both **Ctrl** keys can be redefined.

To program a key, click the key in the upper layout (which represents your keyboard). The **Define Key Macro** dialog box will be displayed. This dialog box shows the current definitions of all the following combinations for the selected key:

**Key**  
**Shift + Key**  
**Control + Key**  
**Control + Shift + Key**  
**Alt + Key**

Each key combination may contain a string of up to 127 characters. The combined total of all the characters that may be programmed into keys is determined by the 127 character limit per definition and the amount of memory available in your PC.

All keyboard macros can be saved so that TeemTalk will reassert them each time it is loaded or reset by displaying the **Save Session As** dialog box from the **File** menu, selecting the **Keyboard Macros** option, then clicking the **OK** button.

## Entering Control Characters

You can enter a control character either as the control key character equivalent or the decimal value of the ASCII character. For example, the control character for the **Return** key function, **CR** (carriage return), can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**.

Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

## Key Combinations & Sequences

You can program a key to perform the function of a combination or sequence of keys. For example, you can cause the **F1** key to perform the same function as pressing the keys **Alt + F4** together, or pressing the keys **F2** then **F3** then **F4**.

Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. The virtual key name has to be enclosed by the **<** and **>** characters in the key definition text box. You may omit the **VK\_** and **VT\_** (etc.) parts of the virtual key name.

To program a key so that it performs the same function as pressing two or more other keys together, type the **<** character followed by the virtual key names linked together with **+** (plus sign) characters and ending with the **>** character.

For example, to program the **F1** key so that when it is pressed it performs the same function as pressing the keys **Alt + F4** together, enter the following characters in the relevant text box:

```
<ALT+F4>
```

To program a key so that it performs the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the **<** and **>** characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces.

For example, to program the **A** key so that when it is pressed it performs the same function as pressing the keys **F2** then **F3** then **F4** enter the following characters in the relevant text box:

```
<F2><F3><F4>
```

## Entering Command Lines

You can enter a command line in a key definition by enclosing it within the ( and ) characters. This enables you to launch an application by just pressing a key. For example, to program the **F1** key so that another instance of TeemTalk-07W is run when the key is pressed, you would enter the following in the relevant text box:

```
(C:\TEEMTALK\TT07W.EXE)
```

## Changing The Window Focus

You can program a key to change the currently selected window or icon (that is the window or icon to which keyboard and mouse commands will be directed) by entering its window class name as a string enclosed by the < and > characters. For example, to program the **F4** key so that the TeemTalk-07W window is selected when the key is pressed, you would enter the following in the relevant text box:

```
<"tt07w">
```

(tt07w is the window class name for TeemTalk-07W.)

## Initiating A Script File

You can program a key to run a script file when pressed by enclosing the name of the file and any arguments within the <' (left angle bracket and single quote) and '> (single quote and right angle bracket) characters.

For example, to program a key so that it will run the script file **myscript.scr** and assign the values **value1** and **value2** to two variables, you would enter the following:

```
<'myscript.scr(value1,value2)'\>
```

Refer to the chapter entitled *Creating A Script File* for more information on initiating script files.

## Action Locally Or Transmit To Host

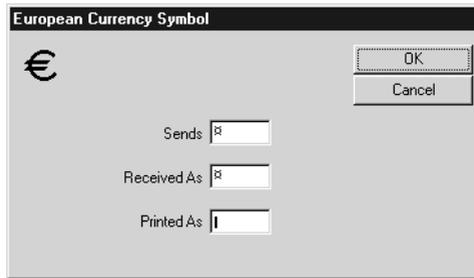
A key definition may be actioned locally or transmitted to the host when the key is pressed. This is determined by the setting of the **Local** check box next to the definition. When the check box is unchecked the definition will be transmitted to the host.

## Default Key Definitions

The default definition of a specific key may be reasserted by clicking the **Default** button in the **Define Key Macro** dialog box for that key. The default definition of the entire keyboard may be reasserted by clicking the **Default** button in the **Keyboard Macros** dialog box.

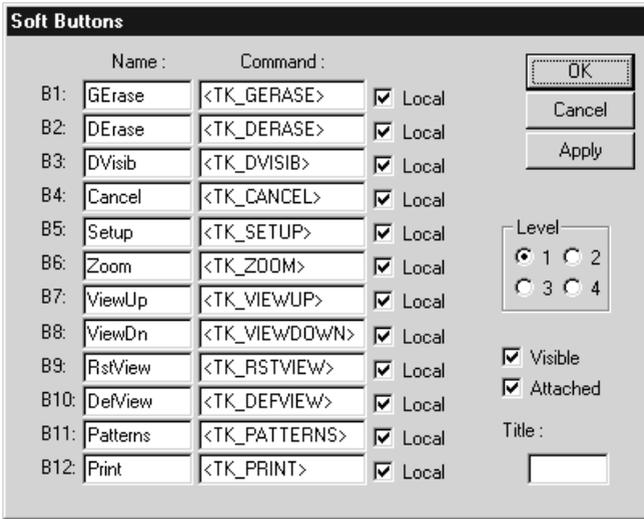
## Euro Sign

TeemTalk enables you to generate the euro sign from the keyboard by pressing the keys **Alt + 4** by default. TeemTalk also provides a cross-mapping mechanism to allow any unused character symbols or string to be cross-mapped to display the euro. This means, for instance, that a host application needing to display the euro could be adjusted to send an unused character or character string, which TeemTalk would convert to the euro symbol. Keyboard mapping is also configurable to allow the input to the application to be similarly cross-mapped. The cross-mapping configuration is specified in the **Euro Currency Symbol** dialog box which is displayed by clicking the **Euro Sign** button in the **Define Key Macro** dialog box.



TeemTalk also provides the ability to print the euro symbol on printers that are euro compliant, or to send a set of sequences that approximate to that symbol on non-euro compliant printers. Similarly, data can be copied to or pasted from other Microsoft Windows desktop applications that are also euro compliant.

## Soft Buttons



This dialog box is displayed by selecting **Soft Buttons** in the **Settings** menu.

A set of soft buttons is displayed at the bottom of the TeemTalk window by default. These can be programmed so that they perform various functions when clicked.

The soft button display can be switched on or off using the **Visible** check box.

The soft buttons can be detached as a separate window by deselecting the **Attached** option.



There are four soft button levels. Level 1 is displayed by default. Each level consists of twelve programmable buttons, providing a combined total of 48 programmable buttons. You can display all four levels at the same time if required. All levels are accessible even if not all are displayed, levels stored off-screen can be 'scrolled' into view by clicking the **Level** button.

You can specify how many levels of soft buttons are actually displayed by using the following initialization file command or command line option:

Initialization file command: **buttonlevels=0-4**  
 Command line option: **-bl0-4**

All four levels can be displayed by specifying **4**. Specifying **0** will cause no soft buttons to be displayed.

You can assign a title to the definition set which will be displayed in the leftmost button in the second row by entering it in the **Title** text box. The title can consist of up to seven characters.

By default the buttons on level 1 are defined with functions relating to the Tek emulation, as described in the *Getting Started* chapter. You can redefine these buttons to perform other functions if required. Note that the Tek functions assigned to buttons 6 through 10 by default are not supported by TeemTalk-05W.

## Programming A Soft Button

To program a soft button, first select which level or definition set of buttons you wish to define by selecting the level number in the **Level** box below the **Apply** button.

Each button can be assigned a name of up to ten characters which is displayed on the button in the window. To assign a name, enter it in the **Name** text box next to the relevant button number.

The button definition is entered in the **Command** text box on the same line as the button number and name. The definition can be up to 80 characters long. The following sections describe various ways in which you can define the buttons.

When you have finished defining a particular level of soft buttons, either click the **OK** button to apply the changes and close the dialog box, or click **Apply** to apply the changes without exiting so that you can define another level straight away.

You can save the new button definitions so that TeemTalk will reassert them each time it is loaded or reset by displaying the **Save Session As** dialog box, selecting the **Soft Buttons** option, then clicking the **OK** button.

## Entering Control Characters

You can enter a control character either as the control key character equivalent or the decimal value of the ASCII character. For example, the control character for the **Return** key function, **CR** (carriage return), can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**.

Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

## Key Combinations & Sequences

You can program a soft button to perform the function of a combination or sequence of keys. For example, you can cause a button to perform the same function as pressing the keys **Alt + F4** together, or pressing the keys **F2** then **F3** then **F4**.

Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. The virtual key name has to be enclosed by the < and > characters in the **Command** text box. You may omit the **VK\_** and **VT\_** parts (etc.) of the virtual key name.

To program a soft button so that it performs the same function as pressing two or more other keys together, type the < character followed by the virtual key names linked together with + characters and ending with the > character.

For example, to program the button **B1** so that when it is clicked it performs the same function as pressing the keys **Alt + F4** together, enter the following characters in the **B1 Command** text box:

```
<ALT+F4>
```

To program a soft button so that it performs the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the < and > characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces.

For example, to program the button **B2** so that when it is clicked it performs the same function as pressing the keys **F2** then **F3** then **F4** enter the following characters in the **B2 Command** text box:

```
<F2><F3><F4>
```

## Entering Command Lines

You can enter a command line in a soft button definition by enclosing it within the ( and ) characters. This enables you to launch an application by just clicking a button. For example, to program the button **B3** so that another instance of TeemTalk-07W is run when the button is clicked, you would enter the following in the **B3 Command** text box:

```
(C:\TEEMTALK\TT07W.EXE)
```

## Changing The Window Focus

You can program a soft button to change the currently selected window or icon (that is the window or icon to which keyboard and mouse commands will be directed) by entering its window class name as a string enclosed by the < and > characters. For example, to program the button **B4** so that the TeemTalk-07W window is selected

when the button is clicked, you would enter the following in the **B4 Command** text box:

```
<"tt07w">
```

(**tt07w** is the window class name for TeemTalk-07W.)

## Initiating A Script File

You can program a soft button to run a script file when pressed by enclosing the name of the file and any arguments within the <' (left angle bracket and single quote) and '> (single quote and right angle bracket) characters. For example, to program a button so that it will run the script file **myscript.scr** and assign the values **value1** and **value2** to two variables, you would enter the following:

```
<'myscript.scr(value1,value2)'
```

Refer to the chapter entitled *Creating A Script File* for more information on initiating script files.

## Action Locally Or Transmit To Host

A soft button definition may be actioned locally or transmitted to the host when the button is clicked. This is determined by the setting of the **Local** check box next to the definition. When the check box is unchecked the definition will be transmitted to the host.

## Mouse Button Actions



This dialog box is displayed by selecting **Mouse Button Action** in the **Settings** menu.

This enables you to specify the function of the left and right mouse buttons when they are pressed on their own or in conjunction with modifier keys. You can assign up to six functions to each button. Clicking one of the arrow buttons will display a drop-down list box which lists all the standard functions that can be assigned:

|                  |                  |
|------------------|------------------|
| Unassigned       | Send CR          |
| Select           | Send Keyword     |
| Extend Selection | Middle Button    |
| Edit Copy        | Select Rectangle |
| Edit Paste       | Select Word      |
| Show Hotspots    | Select and Copy  |
| Action Hotspot   | Cursor Select    |
| Move Cursor      |                  |

The **Select** function will select all text from the start position to the finish position, working left to right across the entire width of the display, whereas the **Select Rectangle** function will only select text contained within the rectangular area defined by the start position (top left corner) and the finish position (bottom right corner). The **Select and Copy** function is the same as **Select** but will also copy the selected data to the Clipboard automatically. The **Select Word** function will cause the word under the mouse cursor to be selected.

The **Show Hotspots** and **Action Hotspots** functions are described in the *Hotspots* chapter. The **Send Keyword** function is very similar to the hotspot feature. It enables you to send delimited text displayed on the screen to the host just by clicking on it.

Delimiters are the same as for hotspots.

The **Move Cursor** function can be used in any of the local block modes as a quick way of positioning the text cursor within a block of text. Move the mouse cursor to the position where the text cursor is required then click the mouse button (and key combination) assigned with the **Move Cursor** function to cause the text cursor to jump to that location.

The **Cursor Select** function performs the same way as **Move Cursor**.

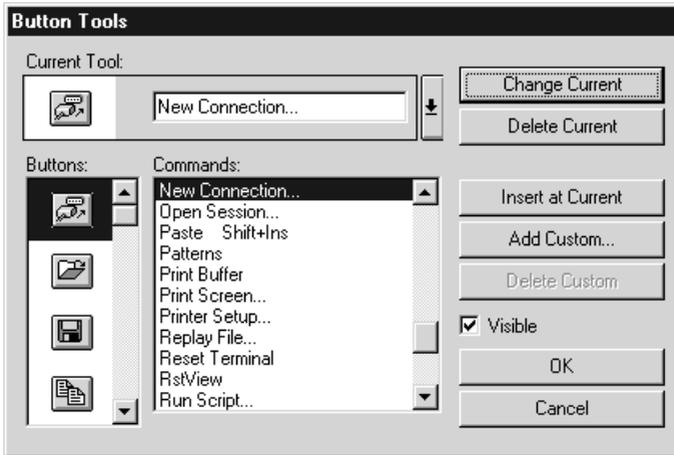
The **Middle Button** setting enables you to make the left or right button (and key combination) of a two button mouse emulate the middle button of a three button mouse.

You can also enter a definition of your own in the text box associated with each button and key combination. Definitions are entered in the same way as for keyboard macros and soft buttons.

The setting of the **Highlight When Actioned** option determines whether or not a visual indication is given that a function has been actioned when a hotspot is clicked.

The **Edit...** button becomes active when you select the **Show Hotspots** or **Action Hotspot** setting. Clicking the **Edit...** button will open a text editor window in which the contents of the current hotspot definition file will be displayed. This enables you to make changes without having to leave TeemTalk. The text editor used by default is **notepad.exe**. You can specify a different text editor by modifying the **Editor=** line in the TeemTalk private profile file.

## Button Tools



This dialog box is displayed by selecting **Button Tools** in the **Settings** menu.

This enables you to redefine the button tools displayed in the toolbar or floating button palette. Up to 64 buttons can be defined. For a complete description of how to use the toolbar and floating button palette, refer to the chapter entitled *The Toolbar*.

A button tool is defined in two stages. The first stage is to specify the button bitmap for display in the toolbar and the second stage is to assign a function to it.

## Adding Button Bitmaps

Clicking the arrow button in the **Current Tool** box will display a list box showing all the button bitmaps in the order displayed in the toolbar, together with their functions. The **Current Tool** will be highlighted in this list. When you add a new button to the toolbar it is positioned to the left of the button currently selected in this list. Select the current tool then close the list box by clicking the arrow button again.

To add a new button, select a button bitmap from the **Buttons** list box then click the **Insert at Current** button. Note that the function of this new button will be the same as that of the previously selected button tool until you redefine it. You can insert a space before the current button tool as it is displayed in the toolbar by selecting [**Space**] in the **Commands** list box then clicking the **Insert at Current** button.

You are not restricted to the set of predefined button bitmaps displayed in the **Buttons** list box. You can add your own customised buttons to the bottom of the list by clicking the **Add Custom...** button. This will display the **Load Custom Bitmap** dialog box which enables you to select a bitmap file from which a button will be automatically generated.

Specify the name of the bitmap file to use then click the **OK** button. The dialog box will close and you will see the new button bitmap highlighted at the bottom of the **Buttons** list box.

If you want to delete a custom button from the **Buttons** list box, select the button bitmap then click the **Delete Custom** button. **DO NOT** click the **Delete Current** button as this will remove the currently selected button tool from the toolbar. Note that you cannot delete the predefined button icons displayed by default.

## Assigning Functions To Buttons

You can assign a variety of functions to the buttons. You can either enter a definition of your own in the same way as for keyboard macros and soft buttons, or you can select a menu command from the **Commands** list box.

The buttons displayed in the toolbar by default are defined with some of the functions listed in the setup menus. (Refer to the chapter entitled *The Toolbar* for details.) These enable you to quickly action a command or display a setup dialog box without having to display the menu first. The **Commands** list box displays all the menu items that can be assigned to the buttons.

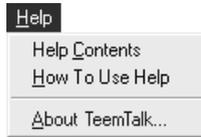
To assign a function to a button, make sure that the button bitmap required is displayed in the **Current Tool** box, enter the new definition in the associated text box or select a menu command from the **Commands** list box, then click the **Change Current** button to action the change. The toolbar will not be updated until you click the **OK** button to close the dialog box.

## Removing Button Tools

You can remove individual button tools from the toolbar or you can remove the entire toolbar and floating button palette from the display.

A button tool is removed by selecting it in the **Current Tool** list box then clicking the **Delete Current** button. To remove the toolbar and floating button palette from the display, deselect the **Visible** check box.

## Help Menu



### Help Contents

Selecting this option will display a help window listing the contents of help for TeemTalk. Clicking an underlined topic or pressing **T**ab**** to highlight the topic then pressing **E**nter**** will cause the window to display information on that topic.

Text that has a continuous underline will cause another topic to be displayed when clicked, while text with a dotted underline will display a small temporary window with a description of the term.

### How To Use Help

This option will display a window which provides information on how to use help.

### About TeemTalk...

Selecting this option will cause a dialog box to be displayed in which details of your version of TeemTalk will be shown. To close the box, click the **O**K**** button.

# 8

## *File Transfer*

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**This chapter describes how to transfer files using the Kermit, XMODEM, XMODEM-1K, YMODEM Batch, ZMODEM and ASCII protocols.**

### *Introduction*

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TeemTalk includes a file transfer utility which enables two-way file transfer between the host and your PC. A range of file transfer protocols are supported to provide compatibility with virtually any host computer. Several transfers may be run simultaneously in the background while you continue to use other Windows applications.

### *Protocols Supported*

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#### **Kermit**

Kermit is a packet-oriented file transfer protocol which enables binary files to be transferred between 7 and 8 bit systems. Multiple file transfers and data compression is supported.

#### **XMODEM**

XMODEM is a block-oriented protocol which enables a single file to be transferred at a time in 128 byte blocks. It uses two-way communications and checks for errors using a cycling redundancy check unless the host does not respond, in which case a checksum is used.

#### **XMODEM-1K**

XMODEM-1K is similar to XMODEM, but uses 1024 byte data blocks, speeding up transmission.

### **YMODEM Batch**

YMODEM Batch is similar to XMODEM-1K, but enables several files to be transferred. It checks for errors using a cycling redundancy check only.

### **ZMODEM**

ZMODEM is an advanced development of YMODEM which enables much faster multiple file transfer with enhanced error detection and aborted transfer resumption. The **zmodemStartup** initialization command or **-zm** command line option can be used to make TeemTalk check incoming data for a remote ZMODEM startup sequence then automatically start a file transfer.

*Note: XMODEM, YMODEM Batch and ZMODEM require a communication setting of 8 data bits, 1 stop bit and no parity. These settings will automatically be used for the transfer, after which the original settings will be reasserted.*

### **ASCII**

ASCII file transfer enables characters to be sent with no handshaking (unless XON/XOFF is enabled) or error checking.

### **ICL FTF**

The ICL FTF protocol supported by TeemTalk for Windows 3.1x can be used in any terminal emulation mode. It requires the DOSLANTI TSR to be loaded, but it is not necessary for the user interface providing you do not attempt to initiate a transfer. Refer to the *ICL FTF File Transfer* chapter for details on how to use it.

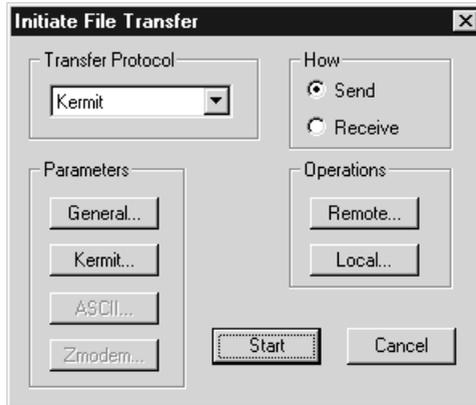
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## Sending Files

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The following procedure is used to transfer files from your PC to the host.

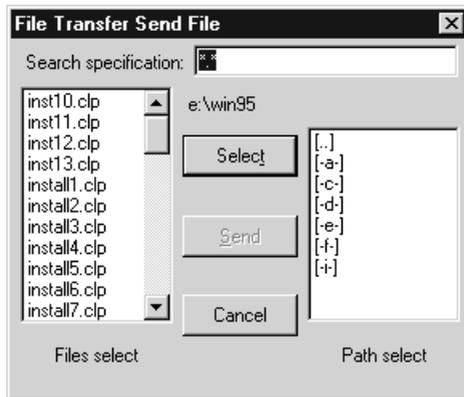
1. Start the transfer procedure on the host computer and specify that files are to be received.
2. Display the TeamTalk **File** menu on your PC and select **File Transfer...** to display the **Initiate File Transfer** dialog box.



3. Select the transfer protocol you wish to use in the **Transfer Protocol** list box.
4. If you want to change the default parameter settings for the chosen transfer protocol, click the relevant **Parameters** button and make your selections in the displayed dialog box then click **OK**. See the section entitled *Setting Protocol Parameters* later in this chapter for details.

*Note: If the file transfer fails it is probably because of differences between the local and remote parity and the word size.*

5. Select **Send** in the **How** box.
6. Click the **Start** button to display the **Send File** dialog box.



7. Specify the directory which contains the file(s) for transfer in the right list box by clicking on one of the path options and clicking the **Select** button until the full directory path displayed above the list box is correct. The files contained in this directory will be displayed in the left list box.
8. Display the name(s) of the file(s) to send in the left list box, either by using the scroll bar or by specifying a filename type (e.g. \*.exe for all files ending with .exe) in the **Search** specification text box then pressing **Return** or clicking the **Select** button.

*Note: Using the **Search** function will cause all filenames displayed in the list box to be automatically selected.*

9. Select the file to send by clicking on the filename in the left list box to highlight it. If more than one file is to be sent, hold down the **Ctrl** key while clicking each additional filename. If the files for selection are listed contiguously, point to the first file then hold down the **Shift** key while dragging the mouse.
10. Once all files to send have been highlighted, click the **Send** button to start transferring data to the host. A window will be displayed showing how the file transfer is progressing. The transfer will continue until all selected files have been received by the host or the transfer is cancelled (refer to the *Cancelling A File Transfer* section later).

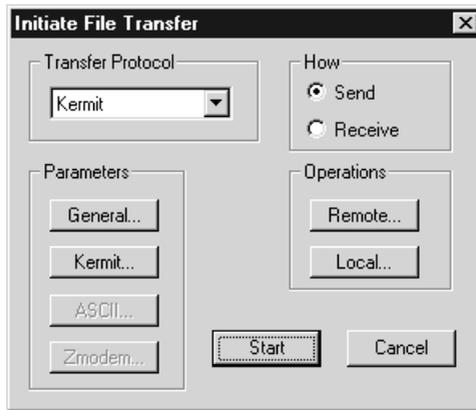
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## Receiving Files

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The following procedure is used to transfer files from the host to your PC.

1. Start the transfer procedure on the host computer and specify that files are to be sent.
2. Display the TeamTalk **File** menu on your PC and select **File Transfer...** The **Initiate File Transfer** dialog box will be displayed.



3. Select the transfer protocol you wish to use in the **Transfer Protocol** list box.
4. If you want to change the default parameter settings for the chosen transfer protocol, click the relevant **Parameters** button and make your selections in the displayed dialog box then click the **OK** button. (The ASCII protocol requires the **Discard partial file** option in the **General Parameters** dialog box to be unselected.)

*Note: If the file transfer fails it is probably because of differences between the local and remote parity and the word size.*

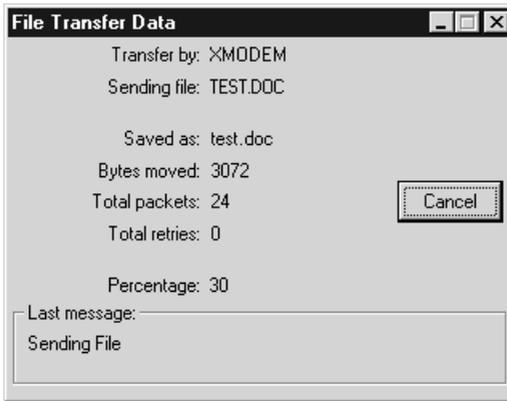
5. If you wish to specify a different local directory for received files, click the **Local** button to display the **Local System Directory / Change Directory** dialog box, then specify the new directory as described in the *Local Operation* section at the end of this chapter.

6. If the kermit protocol is being used and the host kermit is in remote mode, click the **Remote** button in the **Initiate File Transfer** dialog box, then the **Get** button in the **Remote Operations** dialog box to specify the file to be received, otherwise, click the **Receive** button in the **Initiate File Transfer** dialog box.

*Note: The program waits for the arrival of one or more files from the host.*

7. Click the **Start** button. If you selected the XMODEM, XMODEM-1K or ASCII protocol, a dialog box will be displayed in which you specify the name of the file to be received. All the other protocols do not require this as the filename is provided by the sender.

When the transfer begins, a window will be displayed indicating the status of the file transfer.



On completion of the transfer, or if the transfer is cancelled (refer to the next section), an audible tone will sound and appropriate messages will be displayed. (ASCII requires user intervention and will continue to transfer data until you cancel it.)

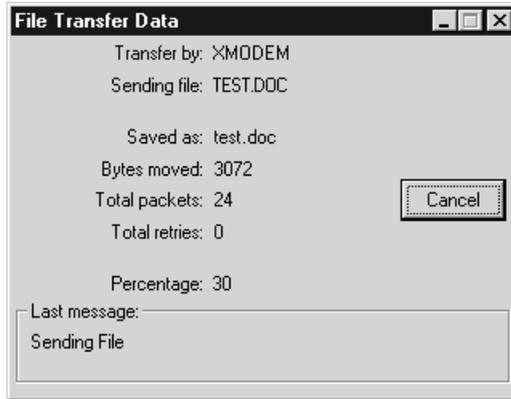
*Note: Once the file transfer is initiated you can minimize the window to run it in the background.*

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## Canceling A File Transfer

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When a file transfer is in progress, the **File Transfer Data** window will be displayed. This will provide information on the progress of the file transfer similar to that shown below.



Clicking the **Cancel** button will display another dialog box with four cancel options.



Selecting **Cancel File** then clicking the **YES** button will cause transfer of the current file to be cancelled by sending a 'Cancel File' message.

Selecting **Cancel Batch** then clicking **YES** will cause transfer of the current file and all remaining files to be cancelled by sending a 'Cancel Batch' message.

Selecting **Cancel Nicely** then clicking **YES** will stop the transfer by sending an error packet with a 'Transfer Cancelled' message.

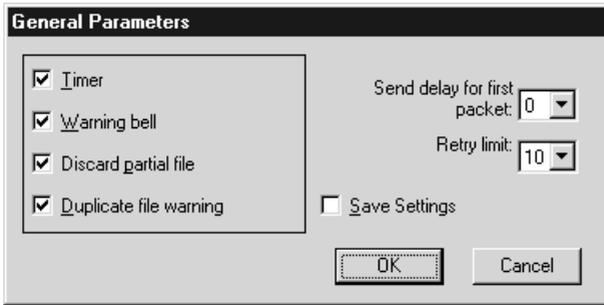
Selecting **Cancel Abruptly** then clicking **YES** will stop the transfer immediately without any messages being sent.

Clicking the **NO** button will close the **Cancel** dialog box.

# Setting Protocol Parameters

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## General Parameters



Clicking the **General...** button in the **Initiate File Transfer** dialog box will cause the **General Parameters** dialog box to be displayed. This enables you to set various parameters for any of the transfer protocols.

Once the settings have been selected, the initialization file can be modified to reflect the changes under the heading [**TeemTalkFTU,Kermit**] by checking the **Save Settings** box then clicking the **OK** button.

### Timer

Factory default: Selected

When this option is selected, if no packets have been received for a certain period of time then a retry will be attempted. The protocol will be exited if the number of retries exceeds that specified by the **Retry limit** option.

### Warning bell

Factory default: Selected

When this option is selected, an audible tone will sound when a transfer is completed or cancelled.

### Discard partial file

Factory default: Selected

This option determines what happens to a file when an error condition occurs or the **Reset** or **Cancel** button is clicked during a file transfer. When selected, the part of the file already transferred will be deleted. When unchecked, the part of the file that has been transferred will be kept.

### **Duplicate file warning**

Factory default: Selected

When this is selected, if an incoming file has the same name as an existing one it will be renamed to avoid overwriting it. A unique generation number will append or replace part of the old name.

### **Send delay for first packet**

Factory default: 0

The setting of this option determines the length of time in seconds before the first packet is sent when sending a file. The time delay can be set to any number of seconds between 0 and 63, inclusive.

### **Retry limit**

Factory default: 10

The setting of this option determines the number of retries that will be performed before the protocol is exited. The retry limit can be set to any number between 1 and 63, inclusive.

## Kermit Parameters

The screenshot shows the 'Kermit Parameters' dialog box. It is organized into several sections:

- OutBound Packets:** Start of Packet: CTRL-A, Timeout in secs: 5, Padding count: 0, Padding char: CTRL-@, End of line char: CTRL-M, Quote char: #, Packet size: 80.
- InBound Packets:** Start of Packet: CTRL-A, Timeout in secs: 5, Padding count: 0, Padding char: CTRL-@, End of line char: CTRL-M, Quote char: #, Packet size: 80.
- Checksum Type:** Radio buttons for 1-Byte (selected), 2-Byte, and 3-Byte-CRC.
- Options:** Checkboxes for Prompt For Filename, Save Settings, and Force Print of File.
- Buttons:** OK and Cancel.

Clicking the **Kermit...** button in the **Initiate File Transfer** dialog box will cause the **Kermit Parameters** dialog box to be displayed. This enables you to set parameters specific to the Kermit protocol.

Once the settings have been selected, the initialization file can be modified to reflect the changes under the heading [**TeemTalkFTU,Kermit**] by checking the **Save Settings** box then clicking the **OK** button.

Most of the settings in this dialog box affect how outbound and inbound packets are treated. These settings may need to be reflected by the remote Kermit as well.

### Start of Packet

Factory default: CTRL-A (i.e. SOH)

This specifies the character which is used to mark the start of a Kermit packet. The character should be changed if the remote host intercepts it.

### Timeout in secs

Factory default: 5

This specifies how long the remote Kermit should wait before timing out.

### Padding count

Factory default: 0

This specifies the number of padding characters to be sent before the packet.

### Padding char

Factory default: CTRL-@ (i.e. NULL)

This specifies the character to use for padding.

### **End of line char**

Factory default: CTRL-M (i.e. CR)

This specifies the character which terminates the packet.

### **Quote char**

Factory default: #

This specifies the character used to indicate that the next character is in the decimal range 0 - 31, 128 - 159, or is a delete character (127).

### **Packet size**

Factory default: 80

This specifies the maximum byte size of a packet from the sequence number byte and including the checksum characters.

### **Checksum Type**

Factory default: 1-Byte

This specifies the type of checksum computation used. **1-Byte** and **2-Byte** selects the standard Kermit 1-byte and 2-byte checksum computations, respectively. **3-Byte-CRC** selects a cyclic redundancy checksum computation which is useful when operating on noisy lines or transferring large packets.

### **Prompt For Filename**

Factory default: Unselected

This option enables you to specify a different file name for each received file.

When enabled, a dialog box will be displayed before each file is sent when performing a Kermit Send File from the host. The dialog box displays the name of the file about to be transferred and gives you the opportunity to change it. If the filename is acceptable, clicking the **OK** or **Cancel** button will cause the transfer to continue, using the filename displayed. If you wish to change the name of the file, edit the name in the text box before clicking **OK**. Clicking **Cancel** will revert back to the original filename.

### **Force Print of File**

Factory default: Unselected

Selecting this option will cause data received as part of a Kermit transfer to be directed to the printer (through print) instead of a file.

## ASCII Parameters



Clicking the **ASCII...** button in the **Initiate File Transfer** dialog box will cause the **ASCII Parameters** dialog box to be displayed. This enables you to set parameters specific to the ASCII protocol.

Once the settings have been selected, the initialization file can be modified to reflect the changes under the heading [**TeemTalkFTU,ASCII**] by checking the **Save Settings** box then clicking the **OK** button.

*Note: The ASCII protocol has additional parameters which can be set in another dialog box by pressing the **General...** button. This dialog box was described earlier.*

### CR Translation

Factory default: CR

This determines how carriage return characters are interpreted. When set to **None**, all carriage returns are removed before data is transferred. When set to **CR**, carriage returns are transmitted as they are. When set to **CR/LF**, every carriage return character will be appended with a line feed character.

*Note: On a PC most text files are delimited by a CR/LF sequence, whereas most mainframes and other systems expect ASCII files delimited only with a CR.*

### LF Translation

Factory default: LF

This determines how line feed codes are interpreted. When set to **None**, all line feeds are removed before data is transferred. When set to **LF**, line feeds are transmitted as they are. When set to **LF/CR**, every line feed character will be appended with a carriage return character.

### **Line Pacing Character**

Factory default: None

This specifies the pacing character used to indicate that the host or PC is ready to receive the next line of data.

### **Line Pacing Time**

Factory default: 0

This specifies the time in 1/10 seconds that the program will pause between each line transmission.

### **Expand Blank Lines**

Factory default: Unselected

The setting of this check box determines how the host interprets blank lines encountered in a data transmission.

When the box is unchecked, lines will be uploaded as they exist. The host will interpret a blank line as an end of message marker.

When the box is checked, a space will be added to lines that contain only a **CR** or **CR/LF** code. This enables lines of text to be spaced out.

## ZMODEM Parameters

**ZMODEM Parameters**

|                              | Send                         | Receive                      |
|------------------------------|------------------------------|------------------------------|
| Data Conversion :            | None                         | None                         |
| File Transfer Action :       | Default                      | Default                      |
| Receive Existing File Only : | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes |
| Change . to / in Filename :  | <input type="checkbox"/> Yes |                              |
| Send Full Pathname :         | <input type="checkbox"/> Yes |                              |
| Remote Command :             |                              |                              |
| Window Size :                | 8192                         |                              |

Escape Control Codes  
 Save Settings

OK Cancel

Clicking the **Zmodem...** button in the **Initiate File Transfer** dialog box will cause the **ZMODEM Parameters** dialog box to be displayed. This enables you to set parameters specific to the ZMODEM protocol. The **Send** settings inform the remote end how to treat the data that will be sent to it. The **Receive** settings will override any **Send** settings specified at the remote end.

Once the settings have been selected, the initialization file can be modified to reflect the changes under the heading [**TeemTalkFTU,ZMODEM**] by checking the **Save Settings** box then clicking the **OK** button.

The **zmodemStartup** private profile file command or **-zm** command line option can be used to make TeemTalk check incoming data for a remote ZMODEM startup sequence then automatically start a file transfer using the settings specified in this dialog box. Note that the transfer protocol selected in the **Initiate File Transfer** dialog box will be ignored.

### Data Conversion

Factory default: None

This specifies whether or not the file being transferred is converted to **ASCII** or **Binary** format at the receiving end, or remains unchanged (**None**).

The **Resume** option enables you to send the remainder of a file if the transfer process is interrupted, for example if data blocks were missed or the connection was lost. This saves you having to retransmit the entire file again.

### **File Transfer Action**

Factory default: Default

This specifies what action is to be taken by the receiving end on files that are transferred.

Selecting **Default** will use the action specified by the receiving end.

**Newer or Longer** will cause files to be transferred if they do not exist in the destination directory and will replace files with the same name if the transfer files are more recent or contain more data.

**CRC Different** will cause the source and destination files to be compared and files will only be transferred if the file lengths or polynomials differ.

**Append** will cause the contents of the transfer file to be appended to the end of the file with the same name in the destination directory.

**Replace** will cause the contents of the transfer file to replace that of the file with the same name in the destination directory

**Newer** will cause files to be transferred if they do not exist in the destination directory and will replace files with the same name if the transfer files are more recent.

**Length Differs** will cause files to be transferred if they do not exist in the destination directory and will replace files with the same name if the file sizes or dates differ.

**Absent** will cause files to be transferred if they are absent from the destination directory.

### **Receive Existing File Only**

Factory default: Unselected

When this option is selected, only files with the same name in the destination directory are transferred.

### **Change . to / in Filename**

Factory default: Unselected

This option enables you to specify that all . (period) characters in the name of a transfer file are converted to / (forward slash) characters.

### **Send Full Pathname**

Factory default: Unselected

The setting of this option determines whether or not the full pathname associated with a transfer file is sent.

### Remote Command

Factory default: Not specified

This enables you to enter a command that will be sent to the remote end to initiate the file transfer. If a remote command is specified, this will be sent to the host with a terminating carriage return character before the transfer is started.

### Window Size

Factory default: 8192

When a file transfer has been initiated, ZMODEM will send data continuously to the receiving end. If the receiving end is slower, then data will be stored on the network. This may cause a problem if an error occurs because the message will take longer to get through to the sender due to the amount of data still waiting on the network.

This option enables you to overcome the problem by limiting the amount of data that is stored on the network before waiting for an acknowledgement from the receiver. The window size relates to the network area taken up by the transfer data. A setting of **0** (zero) specifies that the window size is unlimited. Any other numeric value entered here will be rounded to 256 bytes or the nearest multiple of 64 if higher.

### Escape Control Codes

Factory default: Unselected

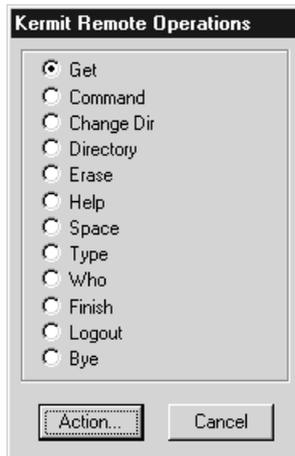
The setting of this option determines whether control codes are sent on their own (default) or preceded by the escape code **CTRL X**.

The escape code prevents problems caused by the removal of control codes during transmission. When this option is selected, control codes are sent as readable characters preceded by **CTRL X**.

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## Kermit Remote Operations

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When **Kermit** is selected as the transfer protocol, the **Remote** button in the **Initiate File Transfer** dialog box provides access to commands that enable you to perform various operations on the host. Kermit has to be operating in server mode on the host for remote commands to function. A command is initiated by selecting it in the **Kermit Remote Operations** dialog box then clicking the **Action...** button.

Most commands will cause a dialog box to be displayed in which you have to enter information, though if the **OK** button is not initially dimmed then the information is not essential for the command to function. A window will display the results of commands. If the results are extensive, an Edit window will display them, enabling you to edit and even transfer them to another Windows application.

### Get

This will display a dialog box in which you specify the name of a file to be obtained from the host.

### Command

This enables you to specify a command which is to be executed by the host. The command must be entered using a valid syntax for the host.

### Change Dir

This enables you to specify a different working directory for the host and enter your password. If no directory is specified, the host will execute its default action for this command. UNIX will enter the home directory.

### **Directory**

This enables you to specify which filenames are listed from the host's working directory. Clicking **OK** when nothing has been specified will cause all filenames to be displayed.

### **Erase**

This enables you to specify the names of files to be deleted from the host's working directory.

### **Help**

This enables you to specify the topic on which help is required. If nothing is entered then clicking **OK** will cause the remote commands understood by the host to be displayed.

### **Space**

This enables you to specify the area for the host to display disk usage information on.

### **Type**

This enables you to specify the names of files to be typed on the host.

### **Who**

This enables you to enquire who is currently using the host.

### **Finish**

When this command is actioned, the remote Kermit will exit server mode.

### **Logout**

This command will execute a logout on the remote host.

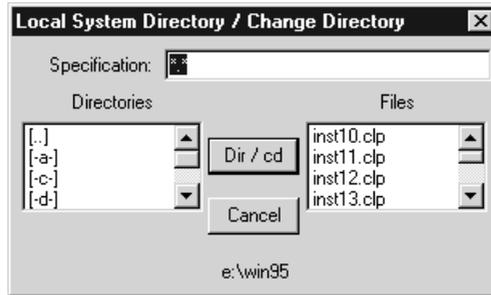
### **Bye**

This command will execute a logout on the remote host and close the Kermit program.

---

## Local Operation

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Clicking the **Local** button in the **Initiate File Transfer** dialog box will display a dialog box which enables you to specify the default local directory for sending and receiving files. The current directory is displayed at the bottom of the dialog box.

The **Specification** text box is used to specify which files in the current directory are displayed in the **Files** selection box. For example, to display all the files with the extension **.exe**, type **\*.exe** then click the **Dir / cd** button.

To change the current directory, scroll through the available directories in the **Directories** list box, then either click the name of the directory once so that it is highlighted and click the **Dir / cd** button, or double-click the name of the directory. The **Files** list box will be updated accordingly and the new directory will be displayed at the bottom of the dialog box. Click the **Cancel** button to action the change and close the dialog box.

*Note: The **Cancel** button in this particular dialog box functions as an **OK** button.*

*Notes*

# 9

## ICL FTF File Transfer

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This chapter describes the ICL FTF file transfer utility supported by TeemTalk for Windows 3.1x in all terminal emulation modes.

### Configuration Requirements

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1. FTF requires the DOSLANTI TSR to be loaded, but it is not necessary for the user interface, providing you do not attempt to initiate a transfer.
2. The list of hosts that can be selected from the FTF dialog box depends on entries in the private profile file **OSLANSVF.INI**. This file is described in the *OSLAN* section of the *Network Connection* chapter in the *Networking Guide*. The LocalTSAP, RemoteTSAP and RemoteLSAP entries for each host must be as shown in the example below.

[nigelpc]

**RemoteDteAddress=020723feda67**

**LocalTSAP=0881** - this entry must be the same for all hosts

**RemoteTSAP=0882** - this entry must be the same for all hosts

**RemoteLSAP=fe** - this entry must be the same for all hosts

3. For an ICL host system to initiate file transfers to FTF it is necessary that the **TFRFOUT** command is used. The **FTTEXTOPTION** parameter should be set to the following:

**"RECPRESERVE=NO,TFORMATING=0001"**

4. The following line must be inserted under the Protocol VCSTS section of **NET.CFG**:

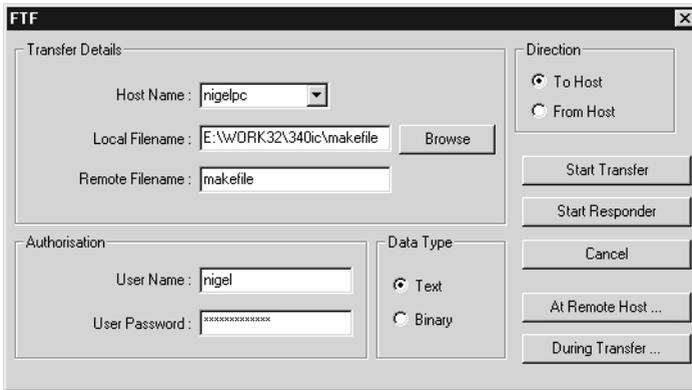
**LOCAL\_LSAP 0xFE**

## Sending & Receiving Files

---

The following procedure is used to transfer files between your PC and the remote host.

1. Run the File Transfer Responder on the remote host computer.
2. Display the TeemTalk **File** menu on your PC and select **File Transfer...** to display the **Initiate File Transfer** dialog box. Select **ICL FTF** in the **Transfer Protocol** list box. The following dialog box will be displayed.



*Note: If you close this dialog box, you can display it again by clicking the **Start** button in the **Initiate File Transfer** dialog box when **Transfer Protocol** is set to **ICL FTF**.*

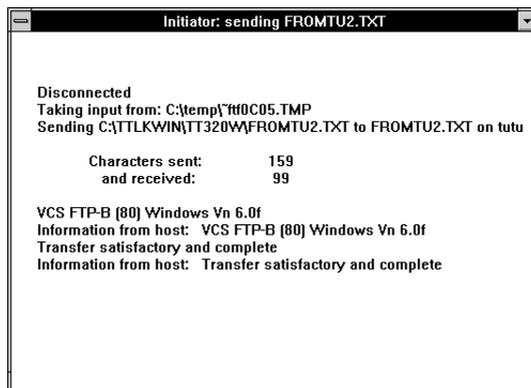
3. Select the name of the remote host in the **Host Name** list box.
4. If you need to provide **Authorisation** for the remote host, enter the required **User Name** and **User Password**. Note that the password will be echoed as a series of asterisks.
5. In the **Local Filename** text box, specify the name and directory path of the file on your PC that is to be sent to the remote host or written to, depending on the transfer direction. You can either type in the filename or click on **Browse** to view the PC's directory structure and make a selection. Note that if you only enter the filename and not the directory, then FTF will assume the file is in the directory in which TeemTalk was installed.
6. In the **Remote Filename** text box, specify the name of the file on the remote host that is to be read or written to, depending on the transfer direction. This can be the same name as the local filename.

7. If the file to be transferred is a binary file, change the **Data Type** setting to **Binary**, otherwise leave it as **Text**. No translation of the data will be performed during the transfer.
8. Specify the **Direction** of the file transfer by selecting **To Host** or **From Host**.
9. If you want to change the default parameter settings for the file transfer, click on the **During Transfer** button to specify the transfer of the data in more detail, or the **At Remote Host** button for options relating to the remote host. These options are described in the following sections.
10. If you are sending a file to the remote host, click on the **Start Transfer** button. If you are receiving a file from the host, click on the **Start Responder** button. Note that clicking **Start Responder** will also enable the remote host to get files from your PC. This can be run at any time and will simply run as a background task.

When the transfer begins, an icon of an open blue book appears. When the transfer has been completed, the book closes and a cross or a tick on the icon indicates whether or not the transfer was successful.

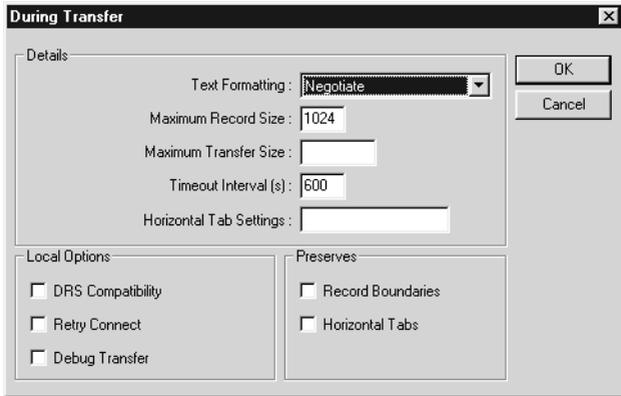


You can maximize the book icon at any time to display information on the state of the transfer. When the transfer is in progress a count of bytes transferred is updated. Any messages relating to the transfer, such as failure messages from the remote file transfer responder, are displayed in the window.



## Transfer Options

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This dialog box is displayed by clicking the **During Transfer...** button in the **FTF** dialog box.

### Text Formatting

Factory default: Negotiate

This specifies the method of formatting text during the file transfer. Clicking on the arrow button will display a list of all the formatting methods supported from which you can make a selection.

- EOR=>, no FEs**    End of record implies new line action. No actions are implied by embedded characters.
- EOR=>NL+FEs**    End of record implies new line action. The formatting actions CR, LF, NL, BS, FF, NP may also be represented by embedded characters.
- EOR=>NP+NL**    End of record implies new page action. The formatting action NL may be represented by embedded characters.
- EOR=>NP+FEs**    End of record implies new page action. The formatting actions CR, LF, NL, BS, FF, NP may also be represented by embedded characters.
- NL**                No formatting action is specified by end of record but the formatting action NL may be represented by embedded characters.

|                      |   |
|----------------------|---|
| <b>FEs</b>           | No formatting action is specified by end of record but the formatting actions CR, LF, NL, BS, FF, NP may be represented by embedded characters. |
| <b>Negotiate</b>     | FTF negotiates with the remote host to decide on the text formatting required.  |
| <b>No formatting</b> | No formatting actions are implied by end of record or by embedded characters.   |

### **Maximum Record Size**

Factory default: 1024

This specifies the maximum record size to be found in the data being transmitted. Records that are larger than this will be fragmented. This may have the effect of inserting spurious new lines depending on the **Text Formatting** setting.

### **Maximum Transfer Size**

Factory default: Unspecified

This specifies the maximum transfer size that will be allowed on this transfer.

### **Timeout Interval(s)**

Factory default: 600

This specifies the timeout, in seconds, that FTF uses to decide when a transfer should be abandoned.

### **Horizontal Tab Settings**

Factory default: Unspecified

This text box enables you to specify a pattern to be used for expanding tabs to spaces by typing spaces where there are no tab stops and an asterisk where there is one. A short pattern repeats up to the end of the line.

### **DRS Compatibility**

Factory default: Unselected

This option should be selected if a DRS system is involved in the transfer. It tells the FTF initiator and responder to make allowances for the limited level of implementation in the standard DRS File Transfer product. Checking this box will not prevent transfers from working with VME, which has a full implementation.

### **Retry Connect**

Factory default: Unselected

When this option is selected, FTF will retry failed connect requests indefinitely, otherwise, FTF will stop if it cannot connect to the remote host.

### **Debug Transfer**

Factory default: Unselected

This option should only be selected under the guidance of a Pericom representative. It causes diagnostic information to be produced which is used for troubleshooting purposes.

### **Preserve Record Boundaries**

Factory default: Unselected

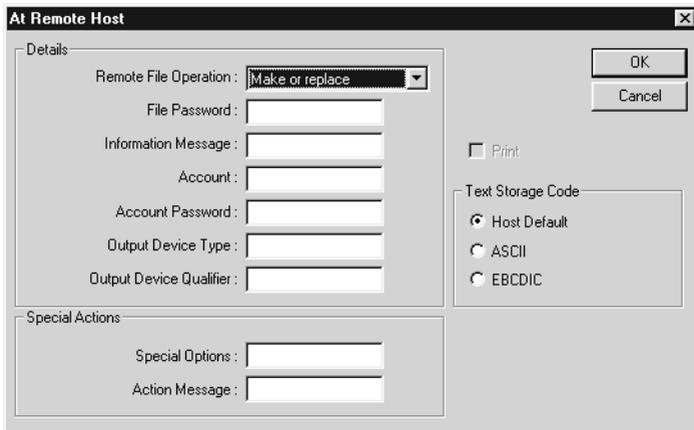
Select this option if you want the receiving system to preserve the record boundaries in the transmitted data when it writes the file to disk. Note that the MS-DOS filestore does not support record-oriented files.

### **Preserve Horizontal Tabs**

Factory default: Unselected

Select this option if you want the receiving system to preserve horizontal tabs in the transmitted data when it writes the file to disk, otherwise tabs may be expanded to spaces.

## Remote Host Options



This dialog box is displayed by clicking the **At Remote Host...** button in the **FTF** dialog box.

### Remote File Operation

Factory default: Make or replace

This specifies what operation should be performed on the file. Click on the arrow button to display a list of operations supported, then double-click to select the mode you want to use. The modes which are available are as follows:

- |                        |  |
|------------------------|--|
| <b>Make</b>            | The file must not exist on the remote system and will be created. If the file is being sent to VME, this will cause a new generation to be created if the file already exists.   |
| <b>Replace</b>         | The file must already exist on the remote system and it will be replaced by the file to be transferred.  |
| <b>Make or replace</b> | The file will be created on the remote system if it does not already exist, but will replace an existing file of the same name. This is the mode of access used if you select the direction of transfer <b>To Host</b> in the main FTF dialog box. |
| <b>Append</b>          | The file must exist on the remote system and the data transferred will be appended to it.  |
| <b>Make or append</b>  | The file will be created on the remote system if it does not already exist, but if it does, the transferred data will be appended to it.   |

- Execute** The file, which must be SCL or VME, will be submitted for execution. See also **Special options**.
- Print** The file, which must be text, will be printed by the remote system after the transfer has completed. See also **Special Options**. This mode is used if you select direction **To Host** in the main FTF dialog box and **Print** in this dialog box.
- Read and remove** The file must exist on the remote system. After being transferred to the local system, it will be deleted on the remote system.
- Read** The file must exist on the remote system and will be transferred to the local system. This mode is used if you select direction **From Host** in the main FTF dialog box.
- Destructive read** The file must exist on the remote system and will be erased as it is transferred to the local system. This mode may not be supported by the remote responder.

### **File Password**

This text box enables you to enter a file password if one is required before you are allowed to do a file transfer.

### **Information Message**

This text box enables you to enter a message that may be logged in the remote system's journal, depending on the remote implementation.

### **Account**

This text box enables you to specify an account if required before you can do a file transfer.

### **Account Password**

This text box enables you to enter an account password if one is required before you are allowed to do a file transfer.

### **Output Device Type**

This enables you to specify the device to be used for output when you selected **Print** for the remote file operation. If you are transmitting to VME, the value of this parameter is a property associated with the device to be used for output as specified in the unit description.

### **Output Device Qualifier**

This text box enables you to enter a qualifying string to the device to be used for output when you selected **Print** for the remote action. If you are transmitting to VME this will be interpreted as an identifier for printer stationery.

## **Text Storage Code**

Factory default: Host Default

This specifies the code in which data is stored at the remote system. Usually you can leave this set to **Host Default** so that the remote system decides for itself what code the data is stored in.

## **Print**

Factory default: Unselected

When selected, this will cause the file to be printed by the remote host after it has been received.

## **Special Options**

This enables you to specify any special options to be actioned by the remote system. If you are transmitting to VME you can specify special options in the following format:

**keyword=value[,keyword=value,...]**

The relevant keywords are:

**ALL** influences the placement of new fully catalogued files

**PRE** B - Transfer records map on to physical blocks  
R - Transfer records map on to CTM records

**FDE** File description to be used

For new fully catalogued files, the description used will be :STD.STDM, modified by one or more of the following values, provided that at least one of them is supplied:

**BLO** BLOCKSIZE

**CLA** CLASS

**RMI** RMIN

**RMA** RMAX

**RTY** RTYPE

**ORG** ORG

**LOC** For spool requests, defines the location at which the output is required.

**PRF** For spool (VME/B only) and job requests, defines the profile under which they should run.

## **Action Message**

The message entered in this text box may be displayed to the remote operator when the transfer begins, depending on the remote system (not for VME).

*Notes*

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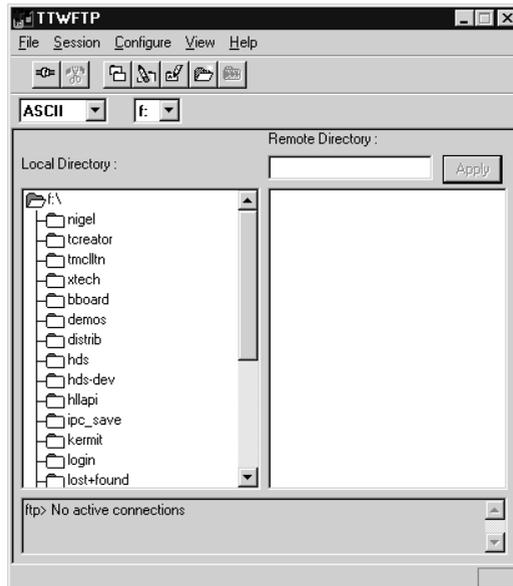
## FTP File Transfer

This chapter describes the FTP file transfer utility for TCP/IP connections.

### The Transfer Procedure

The basic procedure for transferring files is described below. Following sections describe the various options available in detail. Note that FTP only operates on the Windows Sockets stack.

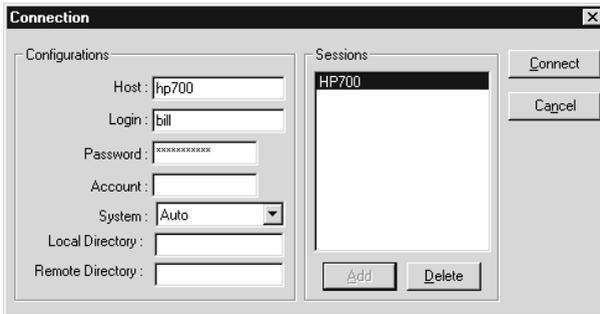
1. Display the **File** menu and select **FTP**. The presence of all available drives including floppy disk drives and network drives will be checked before the **TTWFTP** window is displayed. Note that this may take a few seconds.



The left hand list box will display the contents of the local home directory on your current drive by default. The drive selection list box above it enables you to specify a different disk drive.



- To make a remote host connection, display the **Connection** dialog box either by clicking the following button in the toolbar, or by selecting **Connect to Host** in the **Session** menu.



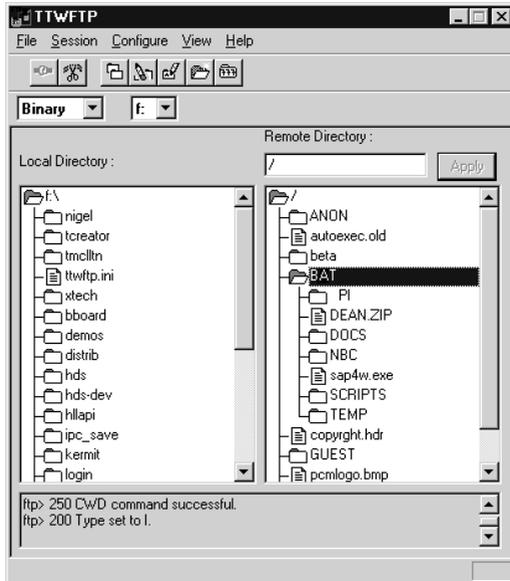
- Enter the **Host** name, **Login** details and **Password** relevant for the host you wish to connect to (on some systems you may be required to enter the **Account** as well). Specify the type of operating system used by the remote host by selecting one of the following from the **System** list box:

|                   |                     |                    |                        |
|-------------------|---------------------|--------------------|------------------------|
| <b>Auto</b>       | <b>VAX MultiNet</b> | <b>VAX TCPWare</b> | <b>HP3000</b>          |
| <b>VAX UCX V1</b> | <b>NT</b>           | <b>Prime</b>       | <b>AS400</b>           |
| <b>VAX UCX V2</b> | <b>UNIX</b>         | <b>IBM (MVS)</b>   | <b>KNET/MVS</b>        |
| <b>VAX UCX</b>    | <b>Tandem</b>       | <b>Dos</b>         | <b>IBM (Interlink)</b> |

**Auto** will cause FTP to automatically select the appropriate operating system and this setting will be suitable in most cases. Note that some DOS based FTP servers cannot automatically be resolved, so it is advisable to select **Dos** when you know the target server is based on a DOS machine. **VAX UCX** applies to versions higher than V2.

The **Local** and **Remote Directory** boxes enable you to specify the start directories (and drive name if required) that FTP will automatically attempt to locate and display in the **TTWFTP** window when a session is connected. The normal default directory (home) will be displayed if no directory is specified or the directory is not accessible.

Click the **Connect** button at the top right corner of this dialog box. TeemTalk will attempt to connect to the specified host. If the connection is successful, you will be returned to the **TTWFTP** window after a few seconds.



If you specified a particular local directory in the **Connection** dialog box then this will be displayed in the left hand list box, otherwise the home directory is displayed by default.

The right hand list box will display the contents of the remote host directory, which will be the home directory by default if you did not specify a particular remote directory in the **Connection** dialog box. If you did specify a remote directory, then FTP will attempt to access and display it. If unsuccessful, then the normal default directory will be displayed. Note that Tandem will not list subdirectory information. The **ftp>** box at the bottom of the window will display messages about each operation as it is performed.

You can display information about the system you are currently connected to in the status line at the bottom of the window by selecting the first item in the **Remote Directory** list box. The status line can also display information on the currently selected file or the first file in a group of selected files.

4. If you want to save the session configuration for future connection, display the **Configure** menu and select **Save Settings on Exit**. This is a toggle selection which will display a tick mark when enabled.



5. Display the directory containing the file(s) to be transferred and the destination directory in the **Local** and **Remote Directory** list boxes as required. The contents of subdirectories can be displayed by by double-clicking the mouse pointer on the folder icons or names. The directory path on the remote host can be specified by entering it in the **Remote Directory** text box then clicking the **Apply** button or pressing the **Return** key.

Note that the directory structure of the AS400 operating system consists of **libraries/files.members**. Changing the directory changes the library. Double-clicking a file name (folder) will display its members (documents).

6. Select the data format required for the file transfer in the list box above the **Local Directory** details.



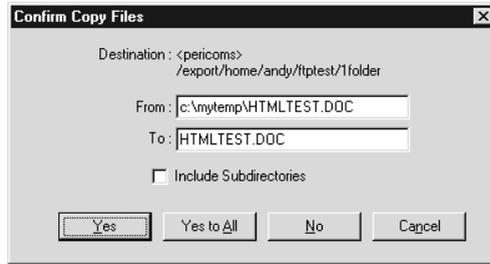
**ASCII** is generally used for document files and **Binary** for executables or non-volatile files. **Tenex** is a specialist format for transfer to Tenex type machines.

7. Select the file(s) or directories to be transferred in the relevant directory list box.

A single item (file or directory) is selected by clicking the mouse pointer anywhere on the line containing its name. Two or more contiguous items can be selected by holding down the **Shift** key while clicking on them. Non-contiguous items can be selected by holding down the **Ctrl** key then clicking on them.

8. When you have selected the file(s) or directories to be transferred, place the mouse pointer on a selected item, hold down the left mouse button and drag the pointer across to the opposite directory list box so that it rests on the icon or file contents of the destination directory, then release the mouse button.

The **Confirm Copy Files** dialog box will be displayed. The **From** box displays the name and location of the file or directory to be transferred. The **To** box shows the name that the transferred file or directory will have at the destination. By default this is the same as the source, but you can change the name here.



If the current directory contains subdirectories that you wish to transfer, check the **Include Subdirectories** check box. This will ensure that FTP creates the relevant subdirectories on the destination drive.

*Note: A new **Confirm Copy Files** dialog box will appear for each subdirectory when it is opened ready for transferring its contents. The dialog box will close when the relevant items in its subdirectory have been transferred.*

Clicking the **Yes** button will transfer the named file or directory then wait for confirmation for the next if applicable.

Usually, clicking **Yes To All** will copy all files and subdirectories from that directory down without waiting for further confirmation. However, if you are already in a subdirectory then an additional **Yes To All Parent Directories Also?** box will appear. Clicking **No** will transfer the remaining files and any subdirectories from the current position in the directory tree without waiting for further confirmation, then return you to the next directory up. Clicking **Yes** will transfer all the files and subdirectories from the original starting point without waiting for further confirmation.

Clicking **No** will cancel the named file or directory while allowing the next file or directory in the selection to be displayed for confirmation.

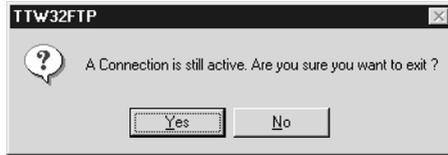
Usually, clicking **Cancel** will cancel the selection and close the dialog box. However, if you are in a subdirectory then a **Cancel Parent Directories Also?** box will appear. Clicking **No** will cancel the transfer at the current position in the directory tree and the next directory up will be displayed ready to continue with the transfer. Clicking **Yes** will terminate all transfers.

9. When you have finished transferring files, disconnect from the host either by clicking the following button in the toolbar, or by selecting **Disconnect from Host** in the **Session** menu.



10. To close the **TTWFTP** window, display the **File** menu and select **Exit**.

Note that if you try to exit without disconnecting from the host, the following message box will be displayed:



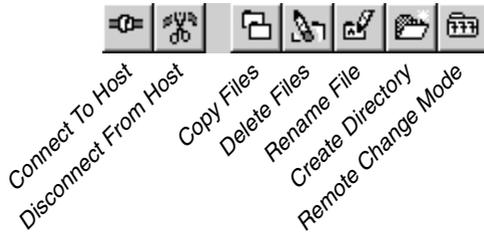
Clicking **Yes** will disconnect from the host then close the **TTWFTP** window.

## Menu & Toolbar Options

Five menus can be displayed from the menu bar, four of which are shown below. The fifth menu, **Help**, enables you to display the software version number.

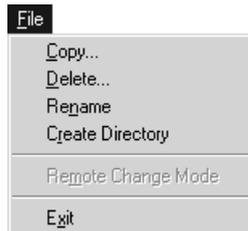


The buttons on the toolbar provide a quick way of performing functions or displaying dialog boxes without having to use the menus.



The following sections describe each of the options available.

### The File Menu



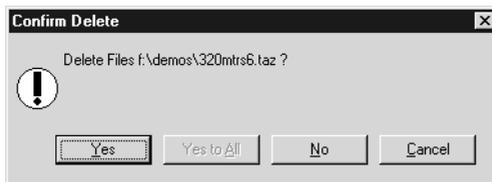
#### Copy

This will display a dialog box which enables you to duplicate a file on the local PC.



## Delete

This will display a message box to confirm that you want to delete the currently selected file(s) or directory on the local PC or remote host. Pressing the **Delete** key will have the same effect. Note that directories have to be empty before they can be deleted.



Clicking the **Yes** button will delete the named file or directory then wait for confirmation for the next if more than one file was selected.

Clicking **Yes to All** will cause all selected files to be deleted without waiting for additional confirmation.

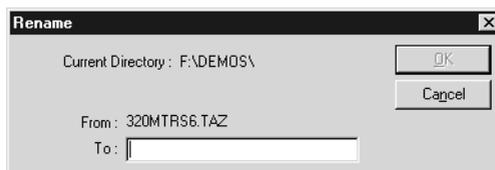
Clicking **No** will cancel the named file while allowing the next file in the selection to be displayed for confirmation.

Clicking **Cancel** will cancel the selection and close the dialog box.

*Note: You can prevent the deletion of files and directories by including a command in the FTP initialization file. Refer to the FTP Initialization File Entries section at the end of this chapter for details.*

## Rename

This will display a dialog box which enables you to change the name of a file or directory on the local PC.



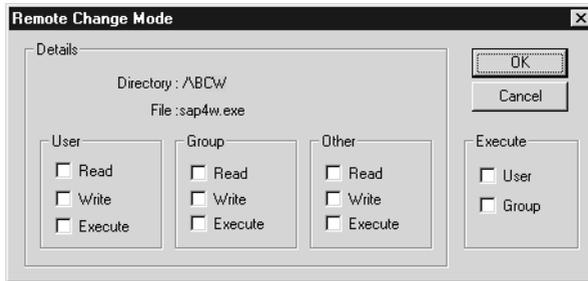
## Create Directory

This will display a dialog box which enables you to create a new directory (or library on AS400) on the local PC or remote host.



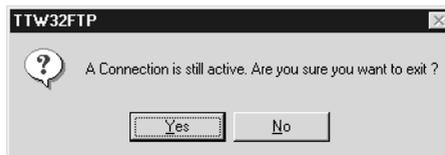
## Remote Change Mode

This will display a dialog box which enables you to change the permission settings available to you for a specified file on the remote host. Note that some FTP sites may not have remote change mode facilities, in which case this dialog box will not be available or the user will be unable to perform the request.



## Exit

This will close the **TTWFTP** window. Note that if you try to exit without disconnecting from the host, the following message box will be displayed:



Clicking **Yes** will disconnect from the host then close the **TTWFTP** window.

## The Session Menu



### Connect to Host

This will display a dialog box which enables you to enter details of the remote host and make a connection.



A connection is made by entering the **Host**, **Login**, **Password** and (if required) **Account** details, specifying the operating system of the remote host, then clicking the **Connect** button.

The operating system type is selected from the **System** list box which includes the following options:

|                   |                     |                    |                        |
|-------------------|---------------------|--------------------|------------------------|
| <b>Auto</b>       | <b>VAX MultiNet</b> | <b>VAX TCPWare</b> | <b>HP3000</b>          |
| <b>VAX UCX V1</b> | <b>NT</b>           | <b>Prime</b>       | <b>AS400</b>           |
| <b>VAX UCX V2</b> | <b>UNIX</b>         | <b>IBM (MVS)</b>   | <b>KNET/MVS</b>        |
| <b>VAX UCX</b>    | <b>Tandem</b>       | <b>Dos</b>         | <b>IBM (Interlink)</b> |

**Auto** will cause FTP to automatically select the appropriate operating system and this setting will be suitable in most cases. Note that some DOS based FTP servers cannot automatically be resolved, so it is advisable to select DOS when you know the target server is based on a DOS machine. **VAX UCX** applies to versions higher than V2.

The **Local** and **Remote Directory** boxes enable you to specify the start directories (and drive name if required) that FTP will automatically attempt to locate and display in the **TTWFTP** window when a session is connected. The normal default directory (home) will be displayed if no directory is specified or the directory is not accessible.

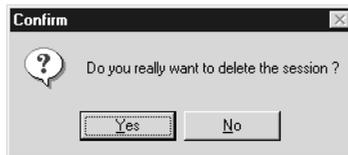
To save you having to enter details of the remote host each time you want to make a connection, you can assign a session name to them which will automatically set the

host, login, password and account details when you click on it. A session name is assigned by clicking the **Add** button to display the following dialog box.



Enter a unique name, the name of the remote host for example, then click **OK** to save the current host connection settings to that name. The session name will be displayed in the **Sessions** list box together with any others that have been defined. Clicking on a session name will automatically update the host connection settings in the dialog box. If you need to change any of the settings assigned to a session name, click on the name, make the relevant changes then click the **Add** button then **OK** to the same name.

You can delete a session name and its associated settings by selecting the name then clicking the **Delete** button. You will be asked to confirm the deletion.



Session names and associated settings can be saved by selecting **Save Settings on Exit** in the **Configure** menu. This is a toggle function which displays a tick mark when selected.

### Disconnect from Host

This will close the current connection with the remote host.

## The Configure Menu



### Transfer Settings

This will display a dialog box which enables you to select or deselect lowercase conversion. File names that incorporate uppercase characters may cause transfer problems on some systems, for example DOS machines. Selecting the **Lowercase**

**Conversion** option will cause all uppercase characters in the name of the file to be converted to lowercase during the transfer process.



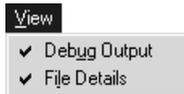
### Save Settings on Exit

This is a toggle function which will display a tick mark when selected. When selected, all the currently defined session names and associated settings will be saved when you exit. All FTP settings are stored in one of the following files:

- Windows 3.1x: **TTWFTP.INI** in the **WINDOWS** directory.
- Windows 95: **TTW32FTP.INI** in the **WIN95** directory.
- Windows NT: **TTW32FTP.INI** in the **WINNT** directory.

Refer to the *FTP Initialization File Entries* section later in this chapter for more information.

## The View Menu



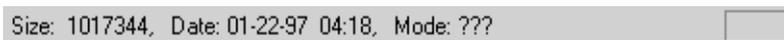
### Debug Output

This is a toggle function which will display a tick mark when selected. Selecting this option will enable debug messages to be displayed in the **ftp>** box at the bottom of the **TTWFTP** window.



### File Details

This is a toggle function which will display a tick mark when selected. Selecting this option will cause details of the currently selected file to be displayed in the status line at the bottom of the **TTWFTP** window.



## FTP Initialization File Entries

---

Session settings specified in the **Connection** dialog box can be saved by selecting **Save Settings on Exit** in the **Configure** menu. This is a toggle function which will display a tick mark when selected. The settings are stored in one of the following files:

- Windows 3.1x:     **TTWFTP.INI** in the **WINDOWS** directory.
- Windows 95:     **TTW32FTP.INI** in the **WIN95** directory.
- Windows NT:     **TTW32FTP.INI** in the **WINNT** directory.

The format of the entries is shown in the example below.

```
[Sessions]
hp9700=hp9700.ses
VaxStation=VaxStation.ses

[hp9700.ses]
Host=hp9700
Login=root
Password=101e002e5f
Account=
SystemType=Auto
LclDir=
RemDir=

[VaxStation.ses]
Host=vax
Login=system
Password=1d101e5813001f5c
Account=
SystemType=Auto
LclDir=
RemDir=
```

## Use Asynchronous Calls

By default FTP uses asynchronous Windows Sockets calls. You can configure FTP to use synchronous calls by adding the following line under a command group headed [**General**]:

**Blocking=1**

Specifying **Blocking=0** or removing this line will cause FTP to use asynchronous calls.

## Disable Delete Command

You can prevent the deletion of files and directories in the **TTWFTP** window by including the command **DisableDelete=1** in a command group headed [**General**]. This will disable the **Delete File** button, the **Delete** option in the **File** menu, and the **Delete** key.

## FTP Command Line Options

---

The command line for running the FTP executable can be extended to include the options described below. Note that the first command after the executable is ignored, so enter this as - or /. The commands are not case sensitive.

### Progress Bar

You can control the progress bar display using the **-b** command line option as follows:

- b0** No progress bar.
- b1** Default progress bar, updated for every byte (ASCII) or block (binary) read.
- b2** Update time and progress bar every 0x7fffffff bytes.

For example, to run FTP without a progress bar the command line would look like this:

**Ttw32ftp - -b0**

### Disabling The Include Subdirectories Option

You can disable the **Include Subdirectories** check box in the **Confirm Copy Files** dialog box by using the following command line option:

**-d-1**

For example: **Ttw32ftp - -d-1**

### Time Out

You can specify the amount of idle time (in seconds) allowed before FTP times out, unless the host closes the connection first, by using the **-t** command line option. For example, to specify time out after 40 seconds you would enter the following:

**Ttw32ftp - -t40**

# 11

## *Initialization Commands*

---

**This chapter describes all the commands that can be included in the initialization file or on the command line.**

### *Introduction*

---

The initialization file is used to store various settings which specify how TeemTalk is initially run and displayed. Once the normal initialization specification has been defined in this file, the settings for a particular instance of TeemTalk may be overridden using command line options.

The following sections describe how to enter commands in the initialization file and on the command line, then describe all the valid initialization commands.

*Note: The default settings of functions relating to terminal emulation are specified via pop-up menus in the main window. These are described in the Setup Menus chapter.*

### *Initialization File*

---

The name and contents of the initialization file will vary depending on which version of Microsoft Windows you are using.

#### **Windows 3.1x**

TeemTalk initialization commands are grouped under one of the following headings in the Microsoft Windows **WIN.INI** file:

|               |                |
|---------------|----------------|
| TeemTalk-05W: | <b>[tt05w]</b> |
| TeemTalk-07W: | <b>[tt07w]</b> |
| TeemTalk-11W: | <b>[tt11w]</b> |

The following command group example will cause TeemTalk-07W to attempt to connect to a network host called **sparc1** using the **LAN Manager** protocol, and display two levels (i.e. 4 rows) of soft buttons.

```
[tt07w]
host=sparc1
protocol=lanman
buttonlevels=2
```

You can specify more than one set of commands in the **WIN.INI** file so that each instance of TeemTalk displayed on the screen can be configured differently. The heading of the command group to action is specified on the command line using the **-n** command line option, so if, for example, the group of commands above was headed [**window1**], the command for actioning this set of commands instead of the default [**tt07w**] set would be **-nwindow1**.

## TeemTalk Private Profile File

A private profile file is used to store settings specific to TeemTalk which are inappropriate for placing in any of the standard Windows **.INI** files. A default private profile file is automatically created when TeemTalk is installed:

|               |                  |
|---------------|------------------|
| TeemTalk-05W: | <b>TT05W.INI</b> |
| TeemTalk-07W: | <b>TT07W.INI</b> |
| TeemTalk-11W: | <b>TT11W.INI</b> |

You can create additional files to meet various requirements, any one of which can be used by TeemTalk instead of the default file by using the command line option:

**-pf***filename*

The private profile file can be placed in any of the standard Windows File search directories to enable TeemTalk to locate it. For example, assuming a default installation of TeemTalk-07W, the private profile file **TT07W.INI** could be placed in any of the following directories:

- 1) **C:\TEEMTALK** (default)
- 2) **C:\WINDOWS**
- 3) **C:\WINDOWS\SYSTEM**
- 4) Any other directory referenced via the environment path variable.

You can view the contents of the current private profile file by displaying the **Startup Options** dialog box from the **File** menu and clicking the **Edit...** button. The format of entries is the same as for those in the **WIN.INI** file. A heading enclosed by square brackets is followed by one or more commands on separate lines, as in the example below:

```
[Untitled.ses]
Wsp=tt07w.wsp
Nv=tt07w.nv

[Sessions]
Default=Untitled.ses

[Startup]
Dialog=1
SaveAsDefault=1
Editor=notepad.exe
```

All entries within the file are searched for on a case insensitive basis.

*Note: TeemTalk **WIN.INI** commands cannot be placed in the private profile file. Settings which should be placed in the private profile file will be clearly indicated.*

## Windows 95 & NT

The TeemTalk private profile file contains various commands which affect the way in which TeemTalk is initially run and displayed. A default private profile file is automatically created when TeemTalk is installed and this has the name **TT\*W.INI**, where \* is the particular version of TeemTalk installed as follows:

|                 |                  |
|-----------------|------------------|
| TeemTalk-05W32: | <b>TT05W.INI</b> |
| TeemTalk-07W32: | <b>TT07W.INI</b> |
| TeemTalk-11W32: | <b>TT11W.INI</b> |

You can create additional files to meet various requirements, any one of which can be used by TeemTalk instead of the default file, by using the command line option:

**-pf***filename*

The private profile file can be placed in any of the standard Windows File search directories to enable TeemTalk to locate it. For example, assuming a default installation of TeemTalk-07W32, the private profile file **TT07W.INI** could be placed in any of the following directories:

- 1) **C:\PROGRAM FILES\TEEMTALK** (default)
- 2) **C:\WIN95** (Windows 95)  
**C:\WINNT35** (Windows NT)
- 3) **C:\WIN95\SYSTEM** (Windows 95)  
**C:\WINNT35\SYSTEM32** (Windows NT)
- 4) Any other directory referenced via the environment path variable.

You can view the contents of the private profile file used by the current instance of TeemTalk by displaying the **Startup Options** dialog box from the **File** menu and clicking the **Edit...** button.

The private profile file will already contain entries similar to the following, where commands are grouped under headings enclosed by square brackets:

```
[Untitled.ses]
Wsp=tt07w.wsp
Nv=tt07w.nv

[Sessions]
Default=Untitled.ses

[Startup]
Dialog=1
SaveAsDefault=1
Editor=notepad.exe
```

Unless specified otherwise, all the initialization commands described in this chapter must be entered under a new heading called:

**[startup,default]** for a set of commands to be used by default,

or

**[startup,name]** for a set of commands that can be used instead of the default set, as specified by a command line option.

Each command must be entered on a separate line under this heading. Note that the commands are not case sensitive.

The following default command group example will cause TeemTalk to attempt to connect to a network host called **neoware** using the **TCP/IP** protocol and display two levels of soft buttons.

```
[startup,default]
host=neoware
protocol=tcip
buttonlevels=2
```

You can specify more than one set of startup commands in the private profile file. Each set of commands other than the default set must have the following heading:

```
[startup,name]
```

where *name* can be any unique identifying name. You can specify which set of startup commands TeemTalk is to use by including the following on the command line for loading TeemTalk, where *name* is substituted with the actual name of the startup group required:

```
-nname
```

If this command is not present then TeemTalk will use the startup commands under the **[startup,default]** heading.

## **Command Line Option Format**

---

The command line is entered in the Microsoft Windows **Program Item Properties** dialog box, which is displayed by selecting **File** then **Properties** in the **Program Manager** window when the TeemTalk icon is selected.

Options are entered after the name of your TeemTalk program and each option must be preceded by a space. An option is immediately followed by its setting if one is required, without a space in between.

The following example will load TeemTalk-07W with the session configuration assigned to the description **MYSETUP** and disable the scroll bar.

**C:\TEEMTALK\TT07W.EXE -se"MYSETUP" -sb**

## Command Summary

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◆ indicates the command does not apply to TeemTalk-05W or TeemTalk-05W32.

### Network Connection

---

| <i>Command Function</i>          | <i>Initialization File</i>           | <i>Command Line</i>  |
|----------------------------------|--------------------------------------|----------------------|
| Network host name                | <b>host=name</b>                     | <i>host/protocol</i> |
| Network protocol                 | <b>protocol=protocol</b>             | <i>host/protocol</i> |
| Load Winsock on startup          | <b>LoadWinsockOnStartup=on</b>       | <b>-lw</b>           |
| NetBIOS version                  | <b>UngBassExtendedNetBIOS=no/yes</b> |                      |
| TSR identifier (Windows 3.1x)    | <b>netid=identifier</b>              | <b>-iidentifier</b>  |
| Input queue size                 | <b>InputQueue=0-4096</b>             | <b>-q0-4096</b>      |
| New session warning message      | <b>sessionWarning=off</b>            | <b>-os</b>           |
| Exit on connection close/fail    | <b>exitOnClose=on</b>                | <b>-e</b>            |
| No exit on connection close/fail | <b>exitOnClose=off</b>               | <b>-e1</b>           |
| Reconnect on close/fail          | <b>exitOnClose=connect</b>           | <b>-e2</b>           |
| Close connection on exit         | <b>warnExit=off</b>                  | <b>-j</b>            |

### Telnet

---

| <i>Command Function</i>     | <i>TeemTalk Private Profile File</i> |
|-----------------------------|--------------------------------------|
| Suppress Telnet echo option | <b>TelnetEchoSuppress=yes/no</b>     |
| Telnet binary options       | <b>TelnetBinary=yes/no</b>           |
| Telnet EOR options          | <b>TelnetEOR=yes/no</b>              |
| Telnet break send TM        | <b>TelnetSendBreakTM=yes/no</b>      |
| Telnet break send CR        | <b>TelnetSendBreakCR=yes/no</b>      |

### Session Configuration

---

| <i>Command Function</i>           | <i>Initialization File</i>   | <i>Command Line</i>     |
|-----------------------------------|------------------------------|-------------------------|
| Startup command group to action   | <i>none</i>                  | <b>-ngroupname</b>      |
| Private profile file to use       | <i>none</i>                  | <b>-pffilename</b>      |
| Path for emulation settings file  | <b>NVPath=directory path</b> | <i>none</i>             |
| Path for workspace settings file  | <b>WSPath=directory path</b> | <i>none</i>             |
| Connection template to use        | <i>none</i>                  | <b>-se"description"</b> |
| Run script file                   | <b>scriptfile=filename</b>   | <b>-scfilename</b>      |
| Return script values in uppercase | <b>ScriptUppercase=on</b>    | <b>-su</b>              |
| Hide script parameters            | <b>scriptparameter=off</b>   | <b>-hs</b>              |
| ZModem startup                    | <b>zmodemStartup=on</b>      | <b>-zm</b>              |
| Disable bell                      | <b>bell=off</b>              | <b>-be</b>              |

### Display

---

| <i>Command Function</i>      | <i>Initialization File</i>  | <i>Command Line</i> |
|------------------------------|-----------------------------|---------------------|
| Window minimized on start-up | <b>windowSize=minimized</b> | <b>-mi</b>          |
| Window maximized on start-up | <b>windowSize=maximized</b> | <b>-ma</b>          |

| <i>Command Function</i>            | <i>Initialization File</i>    | <i>Command Line</i>   |
|------------------------------------|-------------------------------|-----------------------|
| Window fills screen on start-up    | <b>windowSize=fullScreen</b>  | <b>-f</b>             |
| Disable copyright message          | <b>quiet=on</b>               | <b>-qt</b>            |
| Disable Control menu & min/max     | <b>SystemMenu=none</b>        | <b>-sy</b>            |
| Disable Control menu               | <b>SystemMenu=off</b>         | <b>-ms</b>            |
| Disable close window menu item     | <b>MenuCloseItem=off</b>      | <b>-mt</b>            |
| Disable minimize button            | <b>MinimizeBox=off</b>        | <b>-mn</b>            |
| Disable maximize button            | <b>MaximizeBox=off</b>        | <b>-mx</b>            |
| Disable window frame               | <b>windowFrame=off</b>        | <b>-fr</b>            |
| Disable title bar                  | <b>titlebar=off</b>           | <b>-tb</b>            |
| Disable menu bar                   | <b>menubar=off</b>            | <b>-mb</b>            |
| Disable toolbar                    | <b>toolbar=off</b>            | <b>-l</b>             |
| Disable scroll bar                 | <b>scrollbar=off</b>          | <b>-sb</b>            |
| Title to display in title bar      | <b>title="title"</b>          | <b>-t"title"</b>      |
| Subtitle to display in title bar   | <b>subTitle="subtitle"</b>    | <b>-st"subtitle"</b>  |
| Soft button levels displayed       | <b>buttonlevels=0-4</b>       | <b>-bl0-4</b>         |
| Disable status bar                 | <b>statusline=off</b>         | <b>-v</b>             |
| Crosshair cursor size              | <b>CrosshairSize=1-4096</b>   | <b>-x1-4096</b>       |
| Font size displayed by default     | <b>defaultFontIndex=index</b> | <b>-dfindex</b>       |
| Bold font in full screen workspace | <b>UseBoldFont=on</b>         | <b>-bf</b>            |
| Flashing enabled in all sessions   | <b>FlashInBackground=on</b>   | <b>-fb</b>            |
| Text redraw delay                  | <b>TextRedrawDelay=ms</b>     | <b>-rdms</b>          |
| Support multiple surfaces          | <b>planeMasking=on</b>        | <b>-pm / -pmindex</b> |
| ◆ Alpha off during redraw          | <b>hideAlpha=on</b>           | <b>-h</b>             |
| ◆ No graphics show-thru alpha      | <b>hideGraphics=on</b>        | <b>-g</b>             |
| ◆ Segment memory size              | <b>SegmentMemorySize=#</b>    | <b>-sm256-#</b>       |
| ◆ Maximum number of segments       | <b>MaxSegments=#-16000</b>    | <b>-sn#-16000</b>     |

## Keyboard & Mouse

| <i>Command Function</i>       | <i>Initialization File</i>    | <i>Command Line</i> |
|-------------------------------|-------------------------------|---------------------|
| LK450 keyboard                | <b>LK450keyboard=yes</b>      | <b>-kblk450</b>     |
| Mouse cursor style            | <b>mouseCursor=0-10</b>       | <b>-mc0-10</b>      |
| Disable all editing functions | <b>mouseEdit=off/disabled</b> | <b>-me2</b>         |
| Enable all editing functions  | <b>mouseEdit=on/enabled</b>   | <b>-me1</b>         |
| Enable highlighting only      | <i>none</i>                   | <b>-me0</b>         |

## Printing

| <i>Command Function</i>           | <i>Initialization File</i>    | <i>Command Line</i> |
|-----------------------------------|-------------------------------|---------------------|
| Default TeemTalk printer          | <b>device=printer details</b> | <i>none</i>         |
| Use Windows default printer       | <b>UseWindowsPrinter=yes</b>  | <b>-wp</b>          |
| Send data direct to print port    | <b>UsePrintManager=0</b>      | <i>none</i>         |
| Send data to print manager        | <b>UsePrintManager=1</b>      | <i>none</i>         |
| Send print data to file           | <b>printtofile=filename</b>   | <b>-prfilename</b>  |
| Disable remote printing sequences | <b>remotePrinting=off</b>     | <b>-rp</b>          |

## Network Connection

---

### Network Host Name

Initialization File: **host=name**  
Command Line: *hostname/protocol*  
Default Setting: Not applicable

You can make TeemTalk automatically connect to a network host node each time it is loaded or reset by specifying the host name, protocol and, if necessary, a different default TSR identifier in the initialization file or on the command line. The **host=** command is used to specify the name of the host. The communications protocol must be specified on the line below the **host=** command using the **protocol=** command.

On the command line, the host name is immediately followed by a forward slash (/) then the protocol (as listed in the next section). For example, to specify the host as **pericom** and the protocol as **CTERM**, the command line for TeemTalk-07W32 would look like this:

**C:\PROGRAM FILES\TEEMTALK\TT07W.EXE pericom/cterm**

### Network Protocol

Initialization File: **protocol=protocol**  
Command Line: *hostname/protocol*  
Default Setting: Not applicable

You can make TeemTalk automatically connect to a network host node each time it is loaded or reset by specifying the host name, protocol and, if necessary, a different default TSR identifier in the initialization file or on the command line.

In the initialization file, the protocol must be specified on the line immediately below the **host=** command.

The *protocol* setting can be any one of the following:

TeemTalk for Windows 3.1x:

|                 |                 |                 |                |                    |
|-----------------|-----------------|-----------------|----------------|--------------------|
| <b>bapi</b>     | <b>infoconn</b> | <b>lanman</b>   | <b>netbios</b> | <b>pcnfs</b>       |
| <b>bwtcp</b>    | <b>int6B</b>    | <b>lanwp</b>    | <b>netwlat</b> | <b>pctcp</b>       |
| <b>cterm</b>    | <b>int14</b>    | <b>lat</b>      | <b>newt</b>    | <b>TeemTalkosi</b> |
| <b>doslanti</b> | <b>ipxspx</b>   | <b>multilan</b> | <b>oslan</b>   | <b>telapi</b>      |
| <b>eiconx25</b> | <b>isdn</b>     | <b>ncsi</b>     | <b>pathway</b> | <b>winsocK</b>     |

TeemTalk for Windows 95 & NT:

|                 |                    |
|-----------------|--------------------|
| <b>CTERM</b>    | <b>TCPIP</b>       |
| <b>LAT</b>      | <b>TEEMTALKOSI</b> |
| <b>MULTILAN</b> | <b>WINSOCK2</b>    |
| <b>NETBIOS</b>  |                    |

Refer to the *Network Connection* chapter in the *Networking Guide* for a description of these protocols.

Note that if you only specify the host name on the command line then TeemTalk will assume you are using TCP/IP.

If you are using the NetBIOS protocol, refer to the *NetBIOS Version* section in the *Network Connection* chapter of the *Networking Guide* for an additional initialization file command that has to be included.

## Load Winsock On Startup

Initialization File: **LoadWinsockOnStartup=on**

Command Line: **-lw**

Default Setting: **Off**

These commands will initialize the Winsock stack immediately when TeemTalk is started, enabling dialup over PPP or SLIP to gain a connection to a service provider.

## NetBIOS Version

Initialization File: **UngBassExtendedNetBIOS=No/Yes**

Command Line: **Not applicable**

Default Setting: **No**

This command is used to specify the version of NetBIOS being used when you select NetBIOS for network communications. If you are using the Ungermann Bass Net-One NetBIOS, set this command to **Yes**, otherwise set it to **No**.

## TSR Identifier

WIN.INI File: **netid=identifier**

Command Line: **-iidentifier**

Default Setting: **5A**

TeemTalk for Windows 3.1x communicates with its TSR programs and the network kernel software via interrupt 63 (hex). A unique TSR identifier is used to link an instance of TeemTalk to a particular TSR. This enables two or more instances of TeemTalk to use different network protocols, and also allows other software in the system to use interrupt 63.

The default TSR identifier is 5A (hex). You can specify a different default identifier by including the **netid=** command in the **WIN.INI** file. For example, to specify the new default TSR identifier as 48 (hex), you would enter the following line:

**netid=48**

If you want to use a different TSR identifier than the default specified in the **WIN.INI** file (to enable another instance of TeemTalk to use a different network protocol, for example), you need to include the **-i** command line option immediately followed by the new TSR identifier when loading the TSR program and when loading TeemTalk (as specified in the Microsoft Windows **Program Item Properties** dialog box).

For example, to run **FTPTSR** using the identifier **48** (hex), the line entered at the DOS prompt would be:

**FTPTSR -i48**

## Input Queue Size

Initialization File: **InputQueue=0-4096**

Command Line: **-q0-4096**

Default Setting: **255**

These commands enable you to set the input queue size for network data. The size of the input queue will determine how quickly an interrupt command takes effect. For example, pressing the keys **Ctrl + Q** while receiving a long listing will only cause data input to stop once the input queue is empty. The larger the input queue, the longer the interrupt command will take to stop incoming data.

## Disable 'Closed Connection' Message Box

Initialization File: **exitOnClose=on**      TeemTalk exits immediately  
**exitOnClose=off**                      TeemTalk does not exit  
**exitOnClose=connect**                TeemTalk attempts to  
reconnect

Command Line: **-e**    TeemTalk exits immediately  
**-e1**    TeemTalk does not exit  
**-e2**    TeemTalk attempts to reconnect

Default Setting:    Message box displayed

When the host closes the connection or the connection fails, TeemTalk normally displays a message box giving you the option to reconnect, cancel or exit. These commands will disable the message box and cause TeemTalk to immediately perform the required option.

## Disable New Session Warning Message Box

Initialization File: **sessionWarning=off**

Command Line: **-os**

Default Setting:    Enabled

A warning message is displayed by default when you attempt to open a new session while a session is currently open. These commands enable you to disable the message box so that TeemTalk automatically closes the current session and opens the new session.

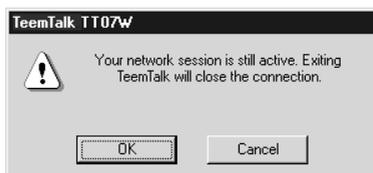
## Disable 'Exit TeemTalk' Message Box

Initialization File: **warnExit=off**

Command Line: **-j**

Default Setting:    Enabled

A message box will be displayed if you attempt to exit TeemTalk while a network session is still active. These commands will disable the message box so that TeemTalk automatically closes the network connection when it is exited.



## Telnet Commands

---

### Suppress Telnet Echo Option

Private Profile File: **TelnetEchoSuppress=Yes**

Command Line: Not applicable

Default Setting: No

This command will suppress TeemTalk generation of the Telnet echo option on connection. It must be placed under the **[Sessions]** heading in the TeemTalk private profile file.

### Telnet Binary Options

Private Profile File: **TelnetBinary=Yes** or **No**

Command Line: Not applicable

Default Setting: Not applicable

This command will force generation of Telnet do (Yes) or dont (No) Binary options to be sent to the host. It must be placed under the **[Sessions]** heading in the TeemTalk private profile file.

### Telnet EOR Options

Private Profile File: **TelnetEOR=Yes** or **No**

Command Line: Not applicable

Default Setting: Not applicable

This command will force generation of Telnet do (Yes) or dont (No) EOR options to be sent to the host. It must be placed under the **[Sessions]** heading in the TeemTalk private profile file.

### Telnet Break Settings

Private Profile File: **TelnetSendBreakTM=Yes** or **No**  
**TelnetSendBreakCR=Yes** or **No**

Command Line: Not applicable

Default Setting: TM only

These commands enable you to specify whether or not a timing mark (**TM**) and/or carriage return (**CR**) is sent with a Telnet break. They must be placed under the **[Sessions]** heading in the TeemTalk private profile file.

## Session Configuration

---

### Startup Command Group To Action

Initialization File: Not applicable

Command Line: **-nname**

Default Setting: Windows 3.1x: **tt\*w** (\* is either **05**, **07**, or **11**)  
Windows 95 & NT: **default**

You can specify more than one set of startup commands in the Windows 3.1x **WIN.INI** file or the Windows 95 or NT **TT\*W.INI** private profile file. This enables you to configure each instance of TeemTalk differently.

#### Windows 3.1x

The heading of the command group to action for a specific instance of TeemTalk is specified on the command line using the **-n** command line option. For example, if the group of TeemTalk-07W commands was headed [**window1**] in the **WIN.INI** file, the command for actioning this set of commands instead of the default [**tt07w**] set would be:

**-nwindow1**

When entering groups of TeemTalk commands in the **WIN.INI** file, make sure that each heading is unique and not duplicated elsewhere in the file.

#### Windows 95 & NT

Each set of commands other than the default set must have the following heading in the **TT\*W.INI** private profile file:

[**startup,name**]

where **name** can be any unique identifying name. You can specify which set of startup commands TeemTalk is to use by including the following on the command line for loading TeemTalk, where **name** is substituted with the actual name of the startup group required:

**-nname**

If this command is not present then TeemTalk will use the startup commands under the [**startup,default**] heading.

## Private Profile File To Use

Initialization File: Not applicable

Command Line: **-pf***filename*

Default Setting: **TT\*W.INI** (\* is either **05**, **07** or **11**)

This command line option enables you to specify a different private profile file for TeemTalk to use instead of the default.

## Path For Emulation Settings File

WIN.INI File: **NVPath**=*directory*

Command Line: Not applicable

Default Setting: **\TEEMTALK**

This command applies to TeemTalk for Windows 3.1x. If you have chosen a different destination directory for the emulation settings file **TT\*W.NV** to the default directory **\TEEMTALK**, you must specify the full directory path using this command.

## Path For Workspace Settings File

WIN.INI File: **WSPath**=*directory*

Command Line: Not applicable

Default Setting: **\TEEMTALK**

This command applies to TeemTalk for Windows 3.1x. If you have chosen a different destination directory for the workspace settings file **TT\*W.WSP** to the default directory **\TEEMTALK**, you must specify the full directory path using this command.

## Connection Template To Use

Initialization File: Not applicable

Command Line: **-se**"*description*"

Default Setting: **Untitled**

This command enables you to override the default connection template used when TeemTalk is loaded, as specified in the **Open Session** dialog box. The *description* must exactly match the description assigned to a connection template already saved using the **Save Session As** dialog box and must be enclosed by double-quotes.

## Run Script File

Initialization File: **scriptfile=filename**

Command Line: **-scfilename**

Default Setting: Not applicable

TeemTalk provides a script language which can be used to automate certain activities such as logging into remote computers. These commands enable you to specify the name (and directory path if necessary) of the script file to initialize. The format of the script file is explained in the chapter *Creating A Script File*.

## Return Script Values In Uppercase

Initialization File: **ScriptUppercase=on**

Command Line: **-su**

Default Setting: Values returned in upper and lowercase

By default, script PGET values are returned unabbreviated with essential characters in uppercase and non-essential characters in lowercase as shown in the *Set & Get Parameters & Values* section in the *Creating A Script File* chapter. For example, the value "Yes" is returned with the essential character "Y" in uppercase, while the other characters are in lowercase. If your script requires the entire value to be returned in uppercase, use this initialization file command or command line option.

## Hide Script Parameters

Initialization File: **scriptparameter=off**

Command Line: **-hs**

Default Setting: Parameters displayed

These commands will cause the values typed in the **Parameters** box in the **Run Script** dialog box to be displayed as asterisks instead of normal text. This is useful for security purposes if you need to enter sensitive data such as a password.

## ZMODEM Startup

Initialization File: **zmodemStartup=on**

Command Line: **-zm**

Default Setting: Off

When ZMODEM startup is enabled, TeemTalk will check incoming data for a remote ZMODEM startup sequence then automatically start a file transfer using the settings

specified in the **ZModem Settings** dialog box. Note that the transfer protocol selected in the **Initiate File Transfer** dialog box will be ignored. Refer to the *File Transfer* chapter for more information.

### Disable Bell

Initialization File: **bell=off**

Command Line: **-be**

Default Setting: Enabled

These commands enable you to turn off the terminal bell.

## Display

---

### Window Minimized When Loaded

Initialization File: **windowSize=minimized**

Command Line: **-mi**

Default Setting: Not applicable

These commands will cause the window to be displayed as an icon when TeemTalk is loaded.

### Window Maximized When Loaded

Initialization File: **windowSize=maximized**

Command Line: **-ma**

Default Setting: Not applicable

These commands will cause the window to be displayed at the maximum size possible when TeemTalk is loaded, while retaining the default number of lines and columns and including all window elements if enabled (title bar, soft buttons etc.).

### Workspace Fills Screen When Loaded

Initialization File: **windowSize=FullScreen**

Command Line: **-f**

Default Setting: Not applicable

These commands will cause the emulation workspace to fill the entire display when TeemTalk is loaded, while retaining the default number of lines and columns. Note that the title bar, menu bar, scroll bar and soft buttons will not be displayed even if they are enabled. You can use the **-bf** or **UseBoldFont=On** commands to make the font bolder if required.

### Disable Copyright Message

Initialization File: **quiet=on**

Command Line: **-qt**

Default Setting: **off** (copyright message displayed)

These commands will stop the copyright message from being displayed when TeemTalk is loaded.

## Disable Control Menu & Min/Maximize Buttons

Initialization File: **SystemMenu=none**

Command Line: **-sy**

Default Setting: **on**

These commands will remove the Control (System) menu icon and the minimize and maximize buttons from the TeemTalk window.

## Disable Control Menu

Initialization File: **SystemMenu=off**

Command Line: **-ms**

Default Setting: **on**

These commands will remove the Control (System) menu icon from the TeemTalk window.

## Disable Close Window Items

Initialization File: **MenuCloseItem=off**

Command Line: **-mt**

Default Setting: **on**

These commands will remove the **Close** window option from the Control (System) menu and, in Windows 95 and NT, disable the close window (**X**) button at the top right corner of the TeemTalk window.

## Disable Minimize Button

Initialization File: **MinimizeBox=off**

Command Line: **-mn**

Default Setting: **on**

These commands will remove the minimize button from the TeemTalk window.

## Disable Maximize Button

Initialization File: **MaximizeBox=off**

Command Line: **-mx**

Default Setting: **on**

These commands will remove the maximize button from the TeemTalk window.

## Disable Window Frame

Initialization File: **windowFrame=off**

Command Line: **-fr**

Default Setting: **on**

These commands will disable the window frame.

## Disable Title Bar

Initialization File: **titlebar=off**

Command Line: **-tb**

Default Setting: **on**

These commands will remove the title bar from the window.

## Disable Menu Items

The following initialization file commands will disable individual menu items:

### **File Menu:**

FileMenu=Off  
Factory=Off  
Reset=Off  
NewConnection=Off  
OpenSession=Off  
CloseSession=Off  
SaveSession=Off  
SaveSessionAs=Off  
StartupOptions=Off  
Capture=Off  
Replay=Off  
FileTransfer=Off  
FTP=Off  
PrintSetup=Off  
PrintScreen=Off  
PrintBuffer=Off  
AutoPrint=Off  
CancelPrint=Off  
EjectPage=Off  
RunScript=Off  
ScriptRec=Off  
Exit=Off

### **Edit Menu:**

EditMenu=Off  
ClipboardText=Off  
ClipboardGraphics=Off  
DDERowCopy=Off  
DDEColumnCopy=Off  
Copy=Off  
Paste=Off  
SelectAll=Off  
ClearBuffer=Off

### **Settings Menu:**

SettingsMenu=Off  
Emulation=Off  
Serial=Off  
Terminal=Off  
Dialog=Off  
Gin=Off  
Attributes=Off  
KeyboardMacros=Off  
SoftButtons=Off  
MouseButtons=Off  
ButtonTools=Off

### **Help Menu:**

Helpmenu=Off

### **Window Size:**

<<=Off  
>>=Off

## Disable Menu Bar

Initialization File: **menubar=off**

Command Line: **-mb**

Default Setting: **on**

These commands will remove the menu bar from the window. The **File**, **Edit** and **Settings** menus and the << and >> window resize commands will be unavailable.

## Disable Toolbar

Initialization File: **toolbar=off**

Command Line: **-l**

Default Setting: **on**

These commands will remove the toolbar from the window.

## Disable Scroll Bar

Initialization File: **scrollbar=off**

Command Line: **-sb**

Default Setting: **on**

These commands will remove the scroll bar from the window.

## Window Title

Initialization File: **title="title"**

Command Line: **-t"title"**

Default Setting: **TeemTalk TT\*W** where \* is **05**, **07** or **11**

These commands enable you to specify the title that is to be displayed in the title bar. This is useful when you are running more than one instance of TeemTalk.

When specifying the title on the command line you must enclose it within double quotes. For example, to use the command line option to specify the title as **New Data**, you would enter the following:

**-t"New Data"**

If no title is specified then the name of your version of TeemTalk will be displayed.

## Window Subtitle

Initialization File: **subTitle="subtitle"**

Command Line: **-st"subtitle"**

Default Setting: **Untitled**

These commands enable you to specify a subtitle for display in the title bar of a specific TeemTalk window. By default the subtitle is the name of the session.

## Soft Buttons Displayed

Initialization File: **buttonlevels=0-4**

Command Line: **-bl0-4**

Default Setting: **1**

A set of soft buttons is displayed at the bottom of the TeemTalk window by default. There are four soft button levels. Level 1 is displayed by default. Each level consists of twelve programmable buttons, providing a combined total of 48 buttons. You can display all four levels (48 buttons) at the same time if required. All levels are accessible even if not all are displayed, levels stored off-screen can be 'scrolled' into view by clicking the **Level** button.

You can specify how many soft button levels are actually displayed by using this initialization file command or command line option. All four levels can be displayed by specifying **4**. Specifying **0** will cause no soft buttons to be displayed.

## Disable Status Bar

Initialization File: **statusline=off**

Command Line: **-v**

Default Setting: **on**

These commands will remove the status bar at the bottom of the window.

## Default Font Size

Initialization File: **defaultFontIndex=index**

Command Line: **-dfindex**

Default Setting: Depends on the display adaptor

The size of the font used by default when TeemTalk is loaded usually depends on the type of display adaptor in your system. However, you can specify a different default

font size by using one of these commands where *index* is the index of the font as defined in the following tables.

The size of the font for a particular index will vary depending on the terminal emulation. Specifying an index outside the range for the emulation will cause the highest valid index number for that emulation to be used. The font sizes are defined in pixels.

| Font Index | DEC VT Modes |          | Tek 4205 & 4207 |          | Tek 4111 |
|------------|--------------|----------|-----------------|----------|----------|
|            | 80 Cols      | 132 Cols | 80 Cols         | 132 Cols | 128 Cols |
| 0          | 24 x 12      | 24 x 7   | 23 x 12         | 23 x 7   | 16 x 8   |
| 1          | 19 x 10      | 19 x 6   | 21 x 11         | 21 x 6   | 14 x 7   |
| 2          | 18 x 9       | 18 x 5   | 19 x 10         | 19 x 6   | 12 x 6   |
| 3          | 17 x 8       | 17 x 4   | 17 x 9          | 17 x 5   | 10 x 5   |
| 4          | 16 x 8       | 16 x 4   | 15 x 8          | 15 x 4   | 8 x 4    |
| 5          | 15 x 8       | 15 x 4   | 13 x 7          | 13 x 4   | 7 x 3    |
| 6          | 14 x 7       | 14 x 4   | 12 x 7          | 12 x 4   | 7 x 3    |
| 7          | 13 x 6       | 13 x 3   | 12 x 6          | 12 x 3   | 7 x 3    |
| 8          | 12 x 5       | 12 x 3   | 11 x 6          | 11 x 3   | 7 x 3    |
| 9          | 10 x 5       | 10 x 3   | 9 x 5           | 9 x 3    | 7 x 3    |
| 10         | 8 x 5        | 8 x 3    | 7 x 4           | 7 x 2    | 7 x 3    |
| 11         | 7 x 5        | 7 x 3    | 6 x 3           | 6 x 2    | 7 x 3    |

## Bold Font In Full Screen Workspace

Initialization File: **UseBoldFont=on**

Command Line: **-bf**

Default Setting: **off**

These commands will make the font bolder when the window size is set to full screen using the **-f** or **windowSize=fullScreen** command.

## Flashing Characters Enabled In All Sessions

Initialization File: **FlashInBackground=on**

Command Line: **-fb**

Default Setting: **off**

These commands enable characters with the flashing attribute to be displayed as such in all session windows in addition to the currently focused window.

## Text Redraw Delay

Initialization File: **TextRedrawDelay=milliseconds**

Command Line: **-rdmilliseconds**

Default Setting: **1000**

These commands enable you to specify the delay period before text is redrawn after terminal inactivity. The numeric value specifies the time in milliseconds. The minimum delay period is 250 milliseconds.

## Support Multiple Surfaces

Initialization File: **planeMasking=on**

Command Line: **-pmindex** (*index* is optional)

Default Setting: Disabled

These commands affect the Tek terminal emulation. If you are using an application that uses multiple surfaces then you can use these commands to enable TeemTalk to support them. Note that your PC must have a display adaptor that supports 256 colour mode and your system must be running in this mode in order for multiple surfaces to be supported.

The command line option can also be used to specify an alternative colour index for the crosshair cursor by entering the decimal value immediately after **-pm**.

## Alpha Off During Redraw

Initialization File: **hideAlpha=on**

Command Line: **-h**

Default Setting: Alpha is on during redraw

These commands enable you to prevent display flicker which is noticeable with some applications when a segment redraw is being performed. (The commands do not apply to TeemTalk-05W or TeemTalk-05W32.)

## Crosshair Cursor Size

Initialization File: **CrosshairSize=size**

Command Line: **-xsize**

Default Setting: **4096**

These commands enable you to specify the size of the graphics cursor, where size is a numeric value in the range 1 to 4096, i.e. world coordinates.

## Disable Graphics Show Through

Initialization File: **hideGraphics=on**

Command Line: **-g**

Default Setting: Graphics shows through alpha

These commands will prevent graphics from showing through dialog area data that has a background colour index other than 0. (The commands do not apply to TeemTalk-05W or TeemTalk-05W32.)

## Segment Memory Size

Initialization File: **SegmentMemorySize=size**

Command Line: **-smsize**

Default Setting: **256** (kilobytes)

These commands specify the amount of available segment memory in 1 kilobyte blocks. The minimum segment memory size that can be specified is 256 kilobytes, the maximum is 2048 kilobytes. (The commands do not apply to TeemTalk-05W or TeemTalk-05W32.)

## Maximum Number Of Segments In Memory

Initialization File: **MaxSegments=#**

Command Line: **-sn#**

Default Setting: **8000**

These commands specify the maximum number of segments that can be stored in segment memory. The maximum number cannot exceed 16000. (The commands do not apply to TeemTalk-05W or TeemTalk-05W32.)

## Keyboard & Mouse

### LK450 Keyboard

Initialization File: **LK450keyboard=yes**

Command Line: **-kblk450**

Default Setting: Not applicable

These commands enable you to specify that an LK450 keyboard is being used.

### Mouse Cursor Style

Initialization File: **mouseCursor=0-10**

Command Line: **-mc0-10**

Default Setting: I-beam cursor

These commands enable you to specify the style of the mouse cursor displayed by default in the TeemTalk window. The values **0** through **10** correspond to the styles shown in the table below.

|   |   |   |   |    |   |
|---|---|---|---|----|---|
| 0 | Default Cursor<br>(I-Beam)  | 4 |    | 8  |  |
| 1 |    | 5 |    | 9  |  |
| 2 |    | 6 |    | 10 | No Cursor   |
| 3 |  | 7 |  |    |   |

### Disable Editing Functions

Initialization File: **mouseEdit=off** or **mouseEdit=disabled**

Command Line: **-me0** allows highlighting but no copy/paste  
except via menus

**-me1** all editing functions enabled

**-me2** all editing functions disabled

Default Setting: All functions enabled

In some cases it may be necessary to disable the copy and paste function of the mouse buttons to prevent accidental editing. This can be achieved by using one of these commands.

When the editing functions are disabled, use the **Edit** menu options or the numeric keypad keys **Shift + .** (i.e. **Del**) to copy and **Shift + 0** (i.e. **Ins**) to paste instead.

## Printing

---

### Default TeemTalk Printer

Initialization File: **device=printer details**

Command Line: Not applicable

Default Setting: As specified in the Control panel

This command enables you to specify a different printer which TeemTalk will use by default instead of that specified in the Control panel.

### Use Windows Default Printer

Initialization File: **UseWindowsPrinter=yes**

Command Line: **-wp**

Default Setting: TeemTalk default printer used.

These commands will cause TeemTalk to use the Windows default printer by default, instead of its own default printer.

### Use Print Manager

Initialization File: **UsePrintManager=0/1**

Command Line: Not applicable

Default Setting: **0**

This command enables you to specify that data is sent to the print manager instead of directly to the port when in Auto Print or Printer Controller mode.

To specify that data is to be sent to the print manager, you would enter the following:

**UsePrintManager=1**

Data will be spooled to the printer but will not be printed until either **Auto Print** mode is disabled or the **Eject Page** option in the **File** menu is selected.

To specify that data is to be sent directly to the port instead of the print manager, you would enter the following:

**UsePrintManager=0**

## Send Print Data To File

Initialization File: **printtofile=filename**

Command Line: **-prfilename**

Default Setting: Not applicable

These commands enable you to direct print data to a specified file instead of the printer.

## Disable Remote Printing Sequences

Initialization File: **remotePrinting=off**

Command Line: **-rp**

Default Setting: Remote printing sequences enabled

These commands will disable all remote printing sequences.

# 12

## *Creating A Script File*

---

This chapter describes TeemTalk's scripting language.

### *Introduction*

---

TeemTalk provides a comprehensive script language which allows all aspects of the emulator to be controlled via user written command files. Operating in real time, the script language can be used to create customised environments, detect and act upon host events, and simulate user input. A script file can be written using any text editor.

### *Initiating A Script File*

---

The script file can be initiated in any of five ways: using an initialization file command, command line option, from the **File** menu, user defined key or button, or remotely using an escape sequence.

### **Using An Initialization File Command**

#### TeemTalk for Windows 3.1

To specify the name of the script file in the **WIN.INI** initialization file, use a text editor to insert the following line under the command group headed **[tt07w]** (i.e. for TeemTalk-07W), separating it from the next command group by a blank line:

**scriptfile=filename**

For example, to initiate the script file named **LOGON**, the command group for TeemTalk-07W would include the following lines:

```
[tt07w]  
scriptfile=LOGON
```

## TeemTalk for Windows 95 & NT

To specify the name of the script file in the **TT\*W.INI** private profile file (where \* is your version of TeemTalk, e.g. **07** for TeemTalk-07W), use a text editor to insert the following line under the command group headed [**startup,default**], separating it from the next command group by a blank line:

```
scriptfile=filename
```

For example, to initiate the script file named **LOGON**, the session command group would include the following line:

```
scriptfile=LOGON
```

## Using A Command Line Option

To specify the name of the script file in the **Program Item Properties** dialog box, click the TeemTalk icon once to select it, then select **File** and **Properties** in the **Program Manager** window. In the **Command Line** text box, type a space after **TT07W.EXE**, then the characters **-sc** immediately followed by the name of the script file. For example, to initiate the script file named **LOGON**, the command line for TeemTalk-07W would read as follows:

```
C:\TEEMTALK\TT07W.EXE -scLOGON
```

## Using The File Menu

The **Run Script** option in the **File** menu displays a dialog box in which you specify the name of the script file to run. Note that any parameters (refer to the section entitled *Assigning Values To Variables*) are not enclosed by parentheses. Clicking the **Ok** button after entering the name of the file will close the dialog box and the script file will be initiated.

You can cancel the initiated script file by selecting the **Cancel Script** option which replaces **Run Script** while a script is running.

Refer to the description of the **File** menu in the *Setup Menus* chapter for more information.

## Using A Key Or Button Definition

You can program a key or button to run a script file when pressed by enclosing the name of the script file plus any parameters (refer to the section entitled *Assigning Values To Variables*) within the **<**' (left angle bracket and single quote) and **>** (single quote and right angle bracket) characters.

For example, to program a key or button so that it will run the script file **myscript.scr** and assign the values **value1** to variable ArgV1 and **value2** to ArgV2, you would enter the following in the key/button definition text box:

```
<'myscript.scr(value1,value2)'>
```

Refer to the *Keyboard Macros* and *Soft Buttons* sections in the *Setup Menus* chapter for information on programming keys and buttons.

## Using An Escape Sequence

A script file can be initiated remotely by using the following escape sequence:

```
ESC P 2 z filename ESC \
```

where *filename* can include arguments as described in the next section.

## Assigning Values To Variables

---

You can specify the value of specific variables within the script file by using the ( ) combination immediately following the name of the script file to be run. For example:

```
myscript.scr(value1,value2,etc)
```

Each value within the parentheses must be separated by a comma with no spaces in between. The script decoder stores the number of values specified, also treating the name of the script file as a value, in the integer variable **ArgC**. The values themselves are assigned to the following **ArgV** string variables: **ArgV0** contains the name of the script file ("**myscript.scr**" in the example above), **ArgV1** contains "**value1**", **ArgV2** contains "**value2**", and so on.

The **ArgC** and **ArgV#** variables are predefined by the script language and so are not defined by the **var** command. Just use the variable names in the program where applicable, remembering that the number of the **ArgV#** variable name must match the location number of the value that will be entered on the command line.

It is up to the user to ensure that the values specified on the command line are in the right order so that they are assigned to the correct **ArgV#** variables.

## Script File Examples

---

### Log On Script

To introduce scripting, here is an example of probably the most obvious task to automate - logging on to a host computer over a network:

```
hrcv hold  
pset network protocol "protocol" nodename "nodename" connect  
  
hcmp 0,"login: "  
put "dave_r"  
  
hcmp 0,"password:"  
put "pericom_r"  
  
hcmp 0,"$ "  
  
exit
```

The **hrcv** command on the first line will be necessary in most cases when checking data from the host. Because characters (usually 1 only) from the host are normally processed between lines of the script file, it is normally necessary to include a **hrcv hold** command to stop this, i.e. to HOLD characters from being processed. This will be in force EXCEPT during **hcmp** and **hget** commands, until another **hrcv** command is encountered.

The **pset** command enables you to change most items on the **Settings** menus, and also 'CURRENT' settings usually set by ESCape sequences. In this case it is imitating what you would do in the **New Connection** dialog box in order to connect to a remote host.

The **hcmp** command allows you to wait until specific character(s) are received EXACTLY from the host. The number before the string specifies how many seconds to wait for the characters. The '0' as used here is an unlimited wait. (In practice it would be better to use a non-zero value and check the system flag to see if the string was received.)

The **put** command sends the specified characters to the host. The **exit** command terminates the script file but does not QUIT TeemTalk.

Within this outline script it is necessary to provide the relevant entries for the system to which connection is required. The second line defines the particular network interface **protocol** and **nodename** being used and initiates the connection.

The **put** lines define the userid and password to be used as 'dave' and 'pericom' respectively. The **hcmp** lines define the particular prompts provided by the host system, at which points the userid and password can be sent to the host. It is vitally important to ensure that the "string" to be waited for in each **hcmp** command is EXACTLY what will be received from the host, otherwise the log-on will fail. It is

also sometimes necessary to ensure that the LAST character received from the host is the LAST character of the string, to ensure that the host is ready to accept what is sent by the **put** command. You can use the **Display Controls** option in the **Terminal Settings** dialog box to find this out.

The script could now be attached to a soft button (or key, mouse button, hotspot, etc.) so that you could simply click on the relevant button to attach to a different host computer. Indeed, several buttons could be set up in this way to allow attachment to a variety of different host computers on the network.

## Programming Soft Buttons

The LOGON script described in the previous section can be attached to a soft button as follows:

```
pset buttons name SB1L1 "log on"  
pset buttons command SB1L1 "<'logon'>"  
  
exit
```

This will label the first button on the top row of soft buttons Level 1 as **'log on'** and cause the script **logon** to be invoked when the left mouse button is clicked on this soft button. This is because the **command** which we programmed into this button included the delimiters **<'** and **'>**, which signify that a script file should be invoked with the filename specified.

To enable connection to more than one host you can program a separate button for each required connection as follows:

```
pset buttons L1TITLE "CONNECT"  
  
pset buttons name SB1L1 "TEK"  
pset buttons command SB1L1 "<'logon1'>"  
  
pset buttons name SB2L1 "W3220"  
pset buttons command SB2L1 "<'logon2'>"  
  
pset buttons name SB3L1 "VAX 1"  
pset buttons command SB3L1 "<'logon3'>"  
  
pset buttons name SB4L1 "VAX 2"  
pset buttons command SB4L1 "<'logon4'>"  
  
exit
```

Now we have configured four soft buttons for connection to four different services ("TEK", "W3220", "VAX 1", "VAX 2"), using four different **LOGON** files. We have also added the **TITLE CONNECT** to the Level 1 soft buttons, which will be shown in the box under **Level 1**.

You can specify a different terminal emulation for each connection by adding another line to each **LOGON** script file as follows:

LOGON1: **pset emul mode tek**  
LOGON2: **pset emul mode w3220**  
LOGON3: **pset emul mode vt2207**  
LOGON4: **pset emul mode vt2208**

## Programming Keyboard Macros

What we have now achieved using soft buttons could also be done using keyboard macros. What you will achieve is less apparent, however, because you have no visible indication like the 'name' displayed on each soft button. However, we would attach a LOGON as above to **Alt + F1** for example with:

```
pset macro A VK_F1 "<'logon1'>"
```

You may also want to change the functions normally assigned to specific keys, where these are expected to return specific values for your application. For example, the following lines are from a script that will redefine an Enhanced AT 102 key keyboard for WordPerfect.

```
pset macro VK_F1 " <vt_f7>"  
pset macro s VK_F1 " <vt_pf1><vt_f7>"  
pset macro c VK_F1 " <vt_pf2><vt_f7>"  
pset macro a VK_F1 " <vt_pf3><vt_f7>"  
  
pset macro c VK_PRIOR " <vt_pf2><vt_f18>2"  
pset macro VK_HOME " <vt_pf4>"  
pset macro VK_ESCAPE " <vt_f6>"  
  
pset macro c VK_END " <vt_pf2><vt_remove>"  
pset macro c VK_NEXT " <vt_pf2><vt_remove>"  
pset macro c VK_BACK " <vt_pf1><vt_remove>"  
pset macro VK_END " <vt_pf4><vt_pf4>"  
pset macro c VK_HOME " <vt_find>"  
pset macro c VK_OEM_MINUS " <vt_f20>"  
pset macro s VK_TAB " <vt_pf1><vk_tab>"  
pset macro c VK_RETURN " <vt_pf1>_013"  
pset macro c VK_ADD " <vk_subtract>"  
pset macro c VK_LEFT " <vt_pf1>_027[D"  
pset macro c VK_RIGHT " <vt_pf1>_027[C"  
pset macro c VK_SEPARATOR " <vt_pf1>_013"  
  
pset macro a VK_a " <vt_pf3>+A"
```

*Note: The underscore character in each virtual key name within a string has to be entered twice because a single underscore character is used to introduce an ASCII decimal value or equivalent.*

Similar definitions can also be applied to soft buttons to allow frequently used sequences to be accessible with one mouse click.

Key combinations are also possible to define by including the complete combination within angle brackets (< and >). For example, to program the **A** key so that it performs the same function as **ALT + F4** :-

```
pset macro VK_A "<ALT+VT_F4>"
```

## Launching An Application & Changing The Window Focus

There are 2 additional 'special' sequences which can be programmed into soft buttons or keyboard macros:

To launch an application, include the 'command line' within round brackets:

```
PSET MACRO VK_F1 "(c:\TeemTalk\tt07w.exe)"
```

To change the window focus (window class name), include it within quotes within angle brackets:

```
PSET MACRO VK_F2 "<_034tt07w_034>"
```

*Note: The decimal value of the double quote character is used within the string to prevent the script program assuming that it terminates the string.*

## Initiating A DDE Conversation

The following script file example will attempt to initiate a DDE conversation with the application Excel and display various informative messages.

```
var $dummy
var %channel1
var %channel2
var $RequestedSelectInfo
var %int=0
var $RequestedInformation
var $ddelist
var $title "TT07W Script to Excel DDE interface_n_r"
pset curr dht, bg blue, fg yellow
wrt title
pset curr dhb
wrt title
pset curr clr
lab5:
DDE initiate "Excel", "system", channel1, ddelist
```

```
if (errno)
  goto lab1:
DDE initiate "Excel", "sheet1", channel2
if (errno)
  goto lab2:
wrt "DDE initiation with Excel succeeded_n_r"
wrt "Excel Supports the following Clipboard formats:_n_r_t"
dde request "Formats" RequestedInformation, channel1
dde request "Selection" RequestedSelectInfo, channel1
wrt RequestedInformation"_n_r"
wrt RequestedSelectInfo"_n_r"
wrt "About to open the Excel Spreadsheet Expenses.xls_n_r"
dde execute '[open("h:\excel\excelcbt\expenses.xls")]', channel1
if (errno)
  {
    wrt "Open spreadsheet failed_n_r"
    goto lab2:
  }
dde poke RequestedInformation, "R1C1:R1C6", channel2
dde cancel channel2
lab2:
dde cancel channel1
goto lab3:
lab1:
if (channel1 < 0)
  goto lab4:
if (int == 1)
  goto lab4:
launch "h:\excel\excel.exe", "min"
if (errno == 0)
  {
    inc int
    goto lab5:
  }
wrt "Unable to launch Excel"
lab3:
inp "_n_rHit Enter to Exit" dummy
exit
lab4:
wrt "Unable to establish dde link with Excel_n_r"
if (channel1 < 0)
  {
    channel1 = - channel1
    wrt "Had "channel1" multiple sessions_n_r"
    wrt ddelist
  }
goto lab3:
```

## Initiating A File Transfer

The following script file example will attempt to initiate a file transfer and display various informative messages.

```

*****
*   Transfer a file using Kermit   *
*****

VAR %reply
VAR %success = 1
VAR $files = ""
VAR $message

HRCV HOLD

GOSUB lab2:
IF (success == 0)
    GOTO lab1:

GOSUB lab3:
IF (success == 0)
    GOTO lab1:

DIALOGUE "File Transfer","Send Filename ?",files
IF (errno)
    GOTO lab1:
IF (files == "")
    GOTO lab1:
GOSUB lab4:
IF (success == 0)
    GOTO lab1:

GOSUB lab5:

HRCV PROC
EXIT

*****
*   Initiate Kermit   *
*****

lab2:
PUT "kermit_r"
HCMP 60,"C-Kermit>"
IF (errno)
{
    MSGBOX "'kermit' did not get 'C-Kermit>' prompt",1,reply
    LET success = 0
    RETURN
}
PUT "set file type binary_r"
HCMP 60,"C-Kermit>"

```

```
IF (errno)
{
  MSGBOX "'set file type binary' did not get 'C-Kermit->' prompt",1,reply
  LET success = 0
  RETURN
}
RETURN
```

```
*****
*   Setting Kermit to 'server'   *
*****
```

```
lab3:
LET success = 1
PUT "server_r"
HCMP 60,"reconnect._n_r_n"
IF (errno)
{
  LET success = 0
  MSGBOX "setting remote Kermit to 'server' failed",1,reply
}
RETURN
```

```
*****
*   Remote Send a 'filename' using Kermit   *
*****
```

```
lab4:
LET success = 1
FTU INITIATE

FTU SET TRANSFER KERMIT
IF (errno)
{
  LET success = 0
  MSGBOX "Could not set 'TRANSFER' mode to 'KERMIT'",1,reply
  GOTO lab6:
}

```

```
FTU SET HOW SEND
IF (errno)
{
  LET success = 0
  MSGBOX "Failed to set 'HOW' parameter to 'SEND'",1,reply
  GOTO lab6:
}

```

```
FTU START files
IF (errno)
{
  LET success = 0
  LET message = "'KERMIT remote SEND' failed (errno = " + errno + "')"
  MSGBOX message,1,reply
  GOTO lab6:
}

```

```
}
ELSE
{
  MSGBOX "'KERMIT remote SEND' successful",1,reply
}
lab6:
FTU CANCEL
RETURN

*****
*   Take Kermit out of 'server' mode   *
*****

lab5:
LET success = 1
FTU INITIATE
FTU SET TRANSFER KERMIT
IF (errno)
{
  LET success = 0
  MSGBOX "Could not set 'TRANSFER' mode to 'KERMIT'",1,reply
  GOTO lab7:
}

FTU SET REMOTE FINISH
IF (errno)
{
  LET success = 0
  MSGBOX "Failed to set 'REMOTE' parameter to 'FINISH'",1,reply
  GOTO lab7:
}

FTU SET HOW REMOTE
IF (errno)
{
  LET success = 0
  MSGBOX "Failed to set 'HOW' parameter to 'REMOTE'",1,reply
  GOTO lab7:
}

FTU START
IF (errno)
{
  LET success = 0
  LET message = "'KERMIT REMOTE FINISH' failed (errno = " + errno + ")"
  MSGBOX message,1,reply
  GOTO lab7:
}

lab7:
FTU CANCEL
RETURN
```

## Syntax Conventions

---

This section explains the rules for writing a script program.

### Program Lines

---

The first text entry of each line must be a script command or a line label, which may be preceded by any number of spaces from the beginning of the line. The command can be entered in upper or lower case. Command parameters may be separated by a comma or/and a space.

### Comments

---

You can enter comments on separate lines or on the same line as a script command. In both cases the comment must be prefixed by a semicolon (;). For example:

```
; This is a comment line  
pset emul mode vt2207 ; This is a comment on a command line
```

### Labelling Lines

---

You can assign a label to a line to indicate the start of a subroutine. Labels do not have to be entered on a separate line, they can be placed anywhere.

A label consists of alphanumeric characters immediately followed by a colon, but note that the label must not begin with a number otherwise it will be treated as a line number by the program. For example:

```
start: pset: subroutine1: are valid labels, whereas  
2start: start : :start are not valid.
```

Note that the label may include the same characters as a script command (such as **pset:** above), but will not be treated as a command as long as it is immediately followed by a colon. References to labels (e.g. by **gobsub** or **goto**) must include the colon.

### Strings & Variables

---

Strings should normally be enclosed by double quote characters unless specified otherwise. You can include double quote characters within a string by entering each character twice with no space in between. The maximum size of a string or variable is 256 characters.

### Underline Characters In Strings

---

To include an underline character in a string so that it is treated as such and not as a control character introducer, enter the character twice with no space in between.

## Decimal Value Of ASCII Characters In Strings

---

You can enter the decimal value of ASCII characters within character strings. A decimal value is entered as a three digit number preceded by an underline character. Decimal values with only two digits must be preceded by a zero.

For example:

|                    |  |
|--------------------|--|
| <b><u>_027</u></b> | means ESC (the Escape character)         |
| <b><u>_010</u></b> | means LF (the Line Feed character)       |
| <b><u>_095</u></b> | means <u>_</u> (the underline character) |

So "**User Identity: \_010\_013**" specifies the string **User Identity:** followed by a line feed then carriage return.

## ASCII Control Character Abbreviations

---

As some ASCII control characters are used frequently within a script file, for example LF (line feed) and CR (carriage return), special abbreviations may be used instead of their decimal values. The list of valid abbreviations for control characters is as follows:

|                  |   |
|------------------|---|
| <b><u>_b</u></b> | Backspace (0x08 hex), the equivalent of <b><u>_008</u></b> .            |
| <b><u>_f</u></b> | Form feed (0x0c hex), the equivalent of <b><u>_012</u></b> .            |
| <b><u>_n</u></b> | New line (line feed) (0x0A hex), the equivalent of <b><u>_010</u></b> . |
| <b><u>_r</u></b> | Carriage return (0x0D hex), the equivalent of <b><u>_013</u></b> .      |
| <b><u>_t</u></b> | Tab (horizontal) (0x09 hex), the equivalent of <b><u>_009</u></b> .     |

So "**User Identity: \_010\_013**" may be entered as "**User Identity: \_n\_r**"

## Boolean Values

---

When a command requires a boolean value, this can be any of the following where the value may be abbreviated to the UPPERCASE characters: **0** or **1**, **No** or **Yes**, **False** or **True**, **OFF** or **ON**.

## Script Operators

---

The script language supports various arithmetic operators to facilitate calculations and manipulations on numeric variables and discrete numeric values. Some of the operators are also extended to provide some useful manipulations on strings and string variables. Operators such as + and \* are straight forward. Those that are not so intuitive will be described with the aid of script examples.

The valid operators are as follows:

( ) \* / % + - < <= > >= == != = += -= \*= /= %=

## Numeric Operators

### Subtraction (-)

---

The - operator takes on one of two guises, depending on how it is used. It is interpreted as a simple subtraction operator in a command such as:

**Data = 4 - 2**

which would set the value stored in Data to 2. However, it can also be used as a negate or "unary minus" operator when used in the following way:

**Data = 4 \* -2**

which would set the value stored in Data to -8.

### Less Than, Greater Than (< <= > >=)

---

These provide a test allowing the comparison of two numeric values, of use within an IF statement. For example:

```
var %Input
inp "Input a number, between 1 and 10", Input
if (Input <= 0)
  goto routine1:
else if (Input > 10)
  goto routine1:
else
  {
    wrt "Input value = ", Input, "_n_r"
    goto routine2:
  }
routine1:
  wrt "You gave an invalid input_n_r"
routine2:
  exit
```

## Equivalence Testing (== !=)

---

The == and != operators allow you to check that a variable is set to a particular value. For example, the following lines could be inserted between the 6th and 7th lines in the above sample code to provide a check for a specific value:

```
else if (Input == 5)
    wrt "That's the value I wanted_n_r"
```

or alternatively, replace the 7th and 9th lines with the following:

```
else if (Input != 5)
    wrt ("That's not the value I wanted_n_r")
```

## Division Operators (/ %)

---

The / operator performs a straight forward division operation on two numerics. If the variable receiving the result of the operation is a float then the defined variable would hold the exact value, otherwise, with an integer variable, the result would be rounded down to the nearest integral value. For example:

```
var %Int
var !Float
Int = Float = 5.0 / 2
wrt "Float result of 5.0 / 2 = ", Float, "_n_r"
wrt "Int result of 5.0 / 2 = ", Int, "_n_r"
exit
```

would print the two lines:

```
Float result of 5.0 / 2 = 2.50000
Int result of 5.0 / 2 = 2
```

Note that the expression **5.0 / 2** is specified, and not **5 / 2**. This is to ensure that the language interpreter performs the arithmetic operation using floats instead of the default of integers. So if the third line was **Int = Float = 5 / 2** the result would be:

```
Float result of 5 / 2 = 2.00000
Int result of 5 / 2 = 2
```

The % operator will only work on integer operations. If a floating point operation contains this operator, the system flag will be set to FALSE, indicating an error, and the rest of the line will be ignored. The operator is provided as a means to achieve the remainder of the result of an integral divide. For example:

```
var %Int
Int = 5 % 2
wrt "result of 5 % 2 = ", Int, "_n_r"
exit
```

would print the line:

```
result of 5 % 2 = 1
```

## Arithmetic Modifiers (+= -= \*= /= %=)

---

These operators all act as per their usual function (if the = was ignored), but have the effect that they substitute the resultant value back into the variable upon which they were operating. For example:

```
var %Int = 9
Int += 1
wrt "Int = ", Int, "_n_r"
exit
```

would print the line:

```
Int = 10
```

## String Operators

There are a limited number of operators that will successfully manipulate strings. These are as follows:

+ += = == != < <= > >=

## Copying Strings (= + +=)

---

These operators will copy one string either onto the end of another, or copy one string to another.

For example:

```
var $String = "Hello"
var $Result
Result = String + " Everybody"
```

would set **Result** to contain the string **"Hello Everybody"**

Or alternatively:

```
var $String = "Hello"
String += " Everybody"
```

would change **String** to contain the string **"Hello Everybody"**

## String Comparison (== != < <= > >=)

---

These operators enable strings to be compared.

The == operator will check that two strings are the same, whereas the != operator will check that they are not the same.

For example:

```
var $String
while (String != "Exit")
    inp "Give me a string", String
exit
```

would keep requesting for input until the string equals **Exit**.

The < and <= operators compare the decimal values of each character in the string in turn to see if the values are less than that of the equivalent characters in the string to which it is compared. In a similar way, the > and => check whether the decimal values are greater.

## Precedence & Order Of Evaluation

| Operator         | Associativity |
|------------------|---------------|
| ( )              | Left to Right |
| ! - (unary)      | Right to Left |
| * / %            | Left to Right |
| + -              | Left to Right |
| < <= > >=        | Left to Right |
| == !=            | Left to Right |
| = += -= *= /= %= | Right to Left |

The above table summarises the rules for precedence and associativity of operators available in the script language. Operators on the same line have the same precedence; lines are in order of decreasing precedence. So, for example, \* / and % have the same precedence, which is higher than that of + and -.

Note that the brackets have the highest priority and are used to override the default precedences assumed by the script decoder.

For example:

```
var %Data
Data = 1 + 2 * 3 + 4
wrt "Data = ", Data, "_n_r"
```

would output **Data = 11**, whereas

```
var %Data
Data = (1 + 2) * (3 + 4)
wrt "Data = ", Data, "_n_r"
```

would output **Data = 21**.

## Command Descriptions

---

The commands that can be used in the script file are described in alphabetical order on the following pages.

### Conventions

#### Character Case

---

Each command description begins by showing the basic command followed by the command format with any parameters. The command itself is shown in uppercase though it is not case sensitive. Commands referred to within the main text, and program examples, are generally shown in lowercase.

#### Parameters

---

If a command requires one or more parameters then an indication of the entry required is enclosed in angle brackets. For example:

**DIALOGUE <title> <caption> <variable>**

Each parameter indicator must be substituted with the relevant information as specified by the description for the command. So for the example above you could enter the following:

**DIALOGUE "Name" "Please enter your name here" name**

If a command includes parameters that may be omitted, these will be enclosed by square brackets. For example:

**HCMP,<time> <string1> [<string2>...]**

where <string2> is optional.

Do not include the angle or square brackets as part of the command unless you are specifically told to do so in the command description.

#### Boolean Values

---

When a command requires a boolean value, this can be any of the following where the value may be abbreviated to the UPPERCASE characters: **0** or **1**, **No** or **Yes**, **False** or **True**, **OFF** or **ON**.

## Command Summary

### PROGRAM COMMANDS

---

|               |  |
|---------------|--|
| <b>BRF</b>    | Branch to specified label line if system flag is false.                |
| <b>BRT</b>    | Branch to specified label line if system flag is true.                 |
| <b>ELSE</b>   | Do the following if previously specified <b>if</b> condition not true. |
| <b>EXIT</b>   | Exit script program but not TeemTalk.                                  |
| <b>GOSUB</b>  | Go to subroutine at specified label line.                              |
| <b>GOTO</b>   | Go to specified label line.  |
| <b>IF</b>     | Perform the following if specified condition is true.                  |
| <b>LAUNCH</b> | Launch specified application.  |
| <b>LET</b>    | Let the following be true.   |
| <b>QUIT</b>   | Exit script program and TeemTalk.                                      |
| <b>RAND</b>   | Put next random number into floating point number variable.            |
| <b>RETURN</b> | Return to line following <b>gosub</b> .                                |
| <b>SEED</b>   | Reset the random number generator seed.                                |
| <b>SWITCH</b> | Compare value with cases & perform command if matched.                 |
| <b>WHILE</b>  | Perform the following while specified condition is true.               |

### CLIPBOARD

---

|                      |   |
|----------------------|---|
| <b>CLIPBD APPEND</b> | Append specified string to the clipboard. |
| <b>CLIPBD EMPTY</b>  | Clear all data from the clipboard.        |
| <b>CLIPBD READ</b>   | Place clipboard contents in variable.     |
| <b>CLIPBD WRITE</b>  | Write data to clipboard.                  |

### COMMUNICATIONS

---

|                |   |
|----------------|---|
| <b>BREAK</b>   | Break for specified time.                             |
| <b>CAPTURE</b> | Log all data received from host to specified file.    |
| <b>CLR</b>     | Clear communications buffer.                          |
| <b>REPLAY</b>  | Replay host data log file created by <b>capture</b> . |
| <b>WAIT</b>    | Host waits for specified time period.                 |

### DYNAMIC DATA EXCHANGE

---

|                     |  |
|---------------------|--|
| <b>DDE CANCEL</b>   | Cancel a DDE conversation.                 |
| <b>DDE EXECUTE</b>  | Partner to perform specified instructions. |
| <b>DDE INITIATE</b> | Start a DDE conversation.                  |
| <b>DDE POKE</b>     | Send data to specified item.               |
| <b>DDE REQUEST</b>  | Request information on specified item.     |

### DISPLAY

---

|            |                                |
|------------|--------------------------------|
| <b>CLB</b> | Clear display buffer.          |
| <b>CLS</b> | Clear display and home cursor. |

|                      |   |
|----------------------|---|
| <b>DIALOGUE</b>      | Display dialog box with text box, Ok & Cancel buttons.            |
| <b>DSP</b>           | Display and action following lines.                               |
| <b>INP</b>           | Display prompt & place entered characters in variable.            |
| <b>MSGBOX</b>        | Display message box incorporating specified buttons.              |
| <b>PASSWORD</b>      | Display dialog box for password entry.                            |
| <b>RDPXY</b>         | Read characters from display buffer position & place in variable. |
| <b>RDT</b>           | Read characters from cursor position & place in variable.         |
| <b>RDTXY</b>         | Read characters from screen position & place in variable.         |
| <b>SUBTITLE</b>      | Display specified text as a subtitle in the title bar.            |
| <b>SYSERR</b>        | Enable/disable display of error message boxes.                    |
| <b>TCMP</b>          | Wait for specified string to appear on the display.               |
| <b>TITLE</b>         | Display specified text as a title in the title bar.               |
| <b>TOOLBAR ADD</b>   | Add a button tool to end of current toolbar set.                  |
| <b>TOOLBAR DEL</b>   | Delete a button tool or space from toolbar.                       |
| <b>TOOLBAR FIX</b>   | Fix toolbar under menu bar.                                       |
| <b>TOOLBAR FLOAT</b> | Toolbar displayed as floating palette.                            |
| <b>TOOLBAR HIDE</b>  | Remove toolbar from display.                                      |
| <b>TOOLBAR INS</b>   | Insert button tool or space at specified position.                |
| <b>WRT</b>           | Display variable or string at cursor position.                    |

## ERROR TRAPPING

---

|                  |  |
|------------------|--|
| <b>ERRORCODE</b> | Return program error code ID or message.                 |
| <b>ERRORLINE</b> | Return number of line containing program error.          |
| <b>ONERROR</b>   | Perform specified action when program error encountered. |

## FILE OPERATIONS

---

|                    |  |
|--------------------|--|
| <b>DIRFIRST</b>    | Get first entry in working directory.              |
| <b>DIRNEXT</b>     | Get next entry in working directory.               |
| <b>FILE CLOSE</b>  | Close specified file.                              |
| <b>FILE COPY</b>   | Copy specified file.                               |
| <b>FILE DELETE</b> | Delete specified file.                             |
| <b>FILE OPEN</b>   | Open specified file.                               |
| <b>FILE READ</b>   | Read file characters & assign to variable.         |
| <b>FILE RENAME</b> | Rename the specified file.                         |
| <b>FILE RGET</b>   | Get single file character & assign to variable.    |
| <b>FILE SEEK</b>   | Specify location in file for read/write operation. |
| <b>FILE STAT</b>   | Get statistics for specified file.                 |
| <b>FILE WPUT</b>   | Write single character from variable to file.      |
| <b>FILE WRITE</b>  | Write variable contents to file.                   |

## FILE TRANSFER

---

|                     |   |
|---------------------|---|
| <b>FTU CANCEL</b>   | Release current links to the file transfer utility. |
| <b>FTU GET</b>      | Get the value of the specified parameter.           |
| <b>FTU INITIATE</b> | Link up to the file transfer utility.               |

|                  |   |
|------------------|---|
| <b>FTU SET</b>   | Set the value of the specified parameter. |
| <b>FTU START</b> | Start the file transfer.                  |

## FTP FILE TRANSFER

---

|                       |  |
|-----------------------|--|
| <b>FTP CD</b>         | Change current local/remote directory.           |
| <b>FTP CONNECT</b>    | Connect to specified host.                       |
| <b>FTP COPYDLG</b>    | Display message box during file transfer.        |
| <b>FTP DIRFIRST</b>   | Get first entry in local/remote directory.       |
| <b>FTP DIRNEXT</b>    | Get next entry in local/remote directory.        |
| <b>FTP DISCONNECT</b> | Close connection with host.                      |
| <b>FTP GET</b>        | Get the specified file from the remote host.     |
| <b>FTP PUT</b>        | Send the specified file to the remote host.      |
| <b>FTP RM</b>         | Remove the specified local/remote file.          |
| <b>FTP SET</b>        | Set the transfer mode to ASCII, binary or Tenex. |
| <b>FTP TOOL</b>       | Display FTP dialog box.                          |
| <b>FTP WD</b>         | Get the local/remote working directory.          |

## HOST CHARACTERS

---

|             |   |
|-------------|---|
| <b>HCMP</b> | Enter terminal emulation and wait for string from host. |
| <b>HGET</b> | Get character from host and place in variable.          |
| <b>HRCV</b> | Specifies treatment of received host characters.        |

## KEYBOARD CHARACTERS & FUNCTIONS

---

|                   |   |
|-------------------|---|
| <b>INP</b>        | Display prompt and place entered characters in variable.    |
| <b>KACT</b>       | Perform function of key as if pressed by terminal operator. |
| <b>KBD</b>        | Type string from keyboard to host.                          |
| <b>KGET</b>       | Get character from keyboard and place in variable.          |
| <b>KINTERCEPT</b> | Intercept & store keystrokes in queue.                      |
| <b>KPRESS</b>     | Perform function of specified key.                          |
| <b>KRAW</b>       | Retrieve keystroke from intercept queue.                    |
| <b>KRCV</b>       | Specifies treatment of received keyboard characters.        |
| <b>KSTR</b>       | Treat following as macro command(s).                        |

## SETUP

---

|                |   |
|----------------|---|
| <b>FACT</b>    | Assert factory default settings.        |
| <b>GETINI</b>  | Get setting from initialization file.   |
| <b>PGET</b>    | Get setup parameter or attribute value. |
| <b>PSET</b>    | Set setup parameter or attribute value. |
| <b>RST</b>     | Reset TeemTalk.                         |
| <b>SAVESET</b> | Save current setup configuration.       |
| <b>SETINI</b>  | Set setting in initialization file.     |

## STRING OPERATIONS

---

|                |   |
|----------------|---|
| <b>DECRYPT</b> | Decrypt encrypted string and place in variable.                       |
| <b>ENCRYPT</b> | Encrypt string and place in variable.                                 |
| <b>FSTR</b>    | Format string to specified length and alignment.                      |
| <b>LEN</b>     | Count characters and spaces in variable.                              |
| <b>LOW</b>     | Convert uppercase characters to lowercase & place string in variable. |
| <b>LSTR</b>    | Copy number of characters from left of string & place in variable.    |
| <b>MSTR</b>    | Copy number of characters from middle of string & place in variable.  |
| <b>PARSE</b>   | Parse string using specified item and place in variables.             |
| <b>PACK</b>    | Remove redundant spaces in string.                                    |
| <b>PACKTAB</b> | Reduce multiple spaces/tabs to a single tab.                          |
| <b>PUT</b>     | Send variable or string to host.                                      |
| <b>RSTR</b>    | Copy number of characters from right of string & place in variable.   |
| <b>UPP</b>     | Convert lowercase characters to uppercase & place string in variable. |
| <b>WRT</b>     | Display variable or string at cursor position.                        |

## VARIABLES

---

|             |   |
|-------------|---|
| <b>CONV</b> | Convert data from one variable type to another. |
| <b>DEC</b>  | Decrement value of specified variable by 1.     |
| <b>INC</b>  | Increment value of specified variable by 1.     |
| <b>LEN</b>  | Count characters and spaces in variable.        |
| <b>PUT</b>  | Send variable or string to host.                |
| <b>VAR</b>  | Specify variable type and name.                 |
| <b>WRT</b>  | Display variable or string at cursor position.  |

## Commands

### BREAK

---

Syntax: **BREAK** <time>

Places a break signal on communications line for the specified time in milliseconds. If no time is specified then the break will be for 250 milliseconds.

### BRF

---

Syntax: **BRF** <label>

If the system flag is set to FALSE, the program branches to the line with the specified label. If the label does not exist, the program continues with the next line.

### BRT

---

Syntax: **BRT** <label>

If the system flag is set to TRUE, the program branches to the line with the specified label. If the label does not exist, the program continues with the next line.

### CAPTURE

---

Syntax: **CAPTURE** <filespec>  
**CAPTURE CANCEL**

This will cause all data received from the host to be stored in the specified file until a **capture cancel** command is issued. The file can be replayed later using the **replay emul** or **replay host** command.

### CLB

---

Syntax: **CLB**

This will cause the contents of the TeemTalk display buffer to be cleared.

### CLIPBD APPEND

---

Syntax: **CLIPBD APPEND** <string>

This command will append the specified string to the clipboard.

## CLIPBD EMPTY

---

Syntax: **CLIPBD EMPTY**

This command will open the clipboard, clear all the data contained in the clipboard, then close it. Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## CLIPBD READ

---

Syntax: **CLIPBD READ <variable>**

This command will open the clipboard, read all the data contained in the clipboard and place it in the specified string variable, then close the clipboard. Note that the data placed in the variable could potentially contain carriage returns, line feeds and tabs.

## CLIPBD WRITE

---

Syntax: **CLIPBD WRITE <string>**

This command will open the clipboard, write the data contained in the string or variable to the clipboard, then close it. The string or variable can contain carriage returns, line feeds and tabs.

## CLR

---

Syntax: **CLR**

Clears the communications buffer.

## CLS

---

Syntax: **CLS**

Moves the cursor to home and clears the screen.

## CONV

---

Syntax: **CONV <destvar> <sourcevar>**

This copies data from **<sourcevar>** and converts its variable type (string, integer or floating point number) to that of **<destvar>**, which will store the result as follows:

| <b>&lt;destvar&gt;</b> | <b>&lt;sourcevar&gt;</b> | <b>Result</b>  |
|------------------------|--------------------------|--|
| string                 | integer                  | <b>&lt;destvar&gt;</b> will contain the ASCII character that has the decimal value given by <b>&lt;sourcevar&gt;</b> . |

| <b>&lt;destvar&gt;</b> | <b>&lt;sourcevar&gt;</b> | <b>Result</b>  |
|------------------------|--------------------------|--|
| integer                | string                   | <b>&lt;destvar&gt;</b> will contain the ASCII decimal value of the first character in <b>&lt;sourcevar&gt;</b> .                         |
| integer                | float                    | <b>&lt;destvar&gt;</b> will contain the result of rounding the floating point number in <b>&lt;sourcevar&gt;</b> to the nearest integer. |
| float                  | integer                  | <b>&lt;destvar&gt;</b> will contain the floating point number equivalent of the integer in <b>&lt;sourcevar&gt;</b> .                    |

---

## DDE CANCEL

---

Syntax: **DDE CANCEL** [**<channel>**]

Cancels the DDE conversation on the channel specified by the **<channel>** variable (as defined by the **dde initiate** command). If no channel variable is specified then the channel ID is assumed to be **1**. More than one channel variable may be specified on the same line. The system flag will be set to **TRUE** if the command is successful, or **FALSE** if failed.

---

## DDE EXECUTE

---

Syntax: **DDE EXECUTE** **<instructions>** [**<channel>**]

This command specifies a list of instructions that the DDE partner should perform, where

**<instructions>** is either a string delimited by *single quote characters* containing the instructions, or a string variable (excluding single quotes).

**<channel>** is the name of the integer variable identifying the particular channel for the DDE link if specified by the **dde initiate** command, otherwise this is omitted.

The following example will cause an Excel file called **expenses.xls** to be opened on channel 1:

```
dde execute '[open("h:\excel\excelcbt\expenses.xls")]' channel1
```

---

## DDE INITIATE

---

Syntax: **DDE INITIATE** **<app>** **<topic>** [**<channel>** **<ddelist>**]

This command starts a dynamic data exchange (DDE) conversation between TeamTalk and an application, where

**<app>** is a string specifying the name of the DDE partner (i.e. the application).

**<topic>** is a string specifying the name of a topic for the DDE partner.

- <channel>** is the name of an integer variable (see **var**) into which an ID will be placed reflecting the particular channel for the initiated DDE link. A maximum of four channels may be used at any one time, each must have a different variable name. This may be omitted if only one channel is to be used (i.e. only one DDE conversation is to be initiated), and the channel ID will be set to **1**.
- <dclist>** is the name of a string variable into which a list of topics found for the DDE partner will be placed. This may be omitted, but if included it must be used in conjunction with **<channel>**.

The system flag will be set to TRUE and the **errno** (error number) variable will be set to 0 if the command is successful, or FALSE and an error number other than 0 if the command failed.

Up to four DDE conversations will be permitted if a **<channel>** variable is specified. When a DDE connection is successfully made, the **<channel>** variable will contain the ID of the conversation. If the connection was unsuccessful, **<channel>** will have a value of **0** or **-#**, where **#** indicates the number of multiple sessions that would have been started.

If **<dclist>** is specified and the **<channel>** variable is **-#**, then **<dclist>** will contain a list of strings relating to each individual session that would have been started. Each entry in the list will be separated by a comma, as follows:

**szAppName1|szTopic1,szAppName2|szTopic2**

You can list the available topics for an application by specifying an empty string for the **<topic>** entry and including the **<channel>** and **<dclist>** variable names. The following example will cause a list of available topics for the application Excel to be stored in the variable **ExcelTopics**:

**dde initiate "Excel" "" channel ExcelTopics**

## DDE POKE

---

Syntax: **DDE POKE <variable> <item> [<channel>]**

Sends a poke to the DDE partner, placing data contained in a variable into a specified item, where

- <variable>** is the name of the variable which contains the information to be placed.
- <item>** is a string containing the name of the item where the information is to be placed.
- <channel>** is the name of the integer variable identifying the particular channel for the DDE link if specified by the **dde initiate** command, otherwise this is omitted.

The following example will place data contained in the variable **data1** into cells located at row 1 column 1 through row 2 column 3 inclusive, with no channel specified (assuming the DDE partner is an Excel spreadsheet):

```
dde poke data1 "R1C1:R2C3"
```

---

## DDE REQUEST

---

Syntax: **DDE REQUEST** <item> <variable> [<channel>]

Requests that information relating to an item is assigned to a variable name, where

- <item>** is a string containing the name of the item from which information is requested.
- <variable>** is the name of a string variable (see **var**) in which the information is to be stored.
- <channel>** is the name of the integer variable identifying the particular channel for the DDE link if specified by the **dde initiate** command, otherwise this is omitted.

The following example will request that data contained in cells located at row 1 column 1 through row 2 column 3 inclusive is to be placed in the variable **data1**, with no channel specified (assuming the DDE partner is an Excel spreadsheet):

```
dde request "R1C1:R2C3" data1
```

---

## DEC

---

Syntax: **DEC** <variable> [<variable>...]

Decreases the integer or floating point number assigned to the specified variable(s) by one.

---

## DECRYPT

---

Syntax: **DECRYPT** <result> <string> <key>

Decrypts a string previously encrypted by the **encrypt** command, where

- <result>** is a previously defined string variable (see **var**) which will store the decrypted string.
- <string>** is a string or string variable containing the hexadecimal characters to decrypt.
- <key>** is one or more characters that were used to define the original encryption.

The *Error Numbers* section lists the possible error numbers for this command.

## DIALOGUE

---

Syntax: **DIALOGUE** <title> <caption> <variable> [<x> <y>]

This command enables you to display a simple dialog box with a specified title, containing two buttons (**Ok** and **Cancel**) and a single line text box with a specified caption, where

- <title> is the text to be displayed in the title bar of the dialog box, as specified by a string delimited by double quotes or a string variable.
- <caption> is the text that will appear to the left or above the text box, as specified by a string delimited by double quotes or a string variable.
- <variable> is a previously defined string variable (see **var**) which is used to store the text entered in the text box by the user, but only if the **Ok** button is pressed, otherwise the variable is set to NULL. Text stored in this variable will be displayed in the text box by default when the dialog is viewed again later.
- <x> <y> specify the horizontal and vertical position of the top left corner of the dialog box in relation to the top left corner of the screen in pixels. These can be integers or variables.

The following example will display a dialog box titled **User** containing a text box with the prompt **Enter your name:**, and cause the text entered in the text box by the user to be stored in the string variable **name** when the **Ok** button is pressed.

**dialogue "User" "Enter your name: " name 100 100**

The *Error Numbers* section lists the possible error numbers for this command.

## DIRFIRST

---

Syntax: **DIRFIRST** <filename> [<size> <mode> <modtm> <uname> <gname>]

This will get the first entry in the working directory and place it in the previously defined string variables, where

- <filename> is a previously defined string variable (see **var**) which will store the name of the file. This is the only variable that must be specified, the others are optional.
- <size> is a previously defined string or integer variable which will store the size of the file.
- <mode> is a previously defined string variable which will store the mode.
- <modtime> is a previously defined string variable which will store the time of the last modification.
- <uname> is a previously defined string or integer variable which will store the user name (UNIX only).

**<gname>** is a previously defined string or integer variable which will store the group name (UNIX only).

Note that if you require a value which follows one or more that are not required, you will still need to supply variables for them. For example, if you only wanted the time that the file was last modified, you would need to specify a variable for **<size>** and **<mode>** as well as **<modtime>**.

Note that on a UNIX system the first entry is always **."**. This command can be followed by one or more **dirnext** commands to work through the directory listing.

If the command is invalid then the variable will be set to "" (zero length).

---

## DIRNEXT

---

Syntax: **DIRNEXT <filename> [<size> <mode> <modtime> <uname> <gname>]**

This will get the next entry in the working directory following a **dirfirst** command and place it in the previously defined string variables, where

**<filename>** is a previously defined string variable (see **var**) which will store the name of the file. This is the only variable that must be specified, the others are optional.

**<size>** is a previously defined string or integer variable which will store the size of the file.

**<mode>** is a previously defined string variable which will store the mode.

**<modtime>** is a previously defined string variable which will store the time of the last modification.

**<uname>** is a previously defined string or integer variable which will store the user name (UNIX only).

**<gname>** is a previously defined string or integer variable which will store the group name (UNIX only).

Note that if you require a value which follows one or more that are not required, you will still need to supply variables for them. For example, if you only wanted the time that the file was last modified, you would need to specify a variable for **<size>** and **<mode>** as well as **<modtime>**.

This command can be followed by more **dirnext** commands to work through the directory listing.

If the command is invalid or there are no more directory entries then the variable will be set to "" (zero length).

## DSP

---

Syntax: **DSP <integer>**

If the integer is **1**, all the program lines that follow are displayed and actioned. If the integer is **0**, all following lines are actioned but not displayed.

## ELSE

---

Syntax: **ELSE**

This command is used in conjunction with the **if** command and informs the program to perform the command(s) on the following line(s) if a previously specified **if** condition was not true.

For example:

```
if (integer > 3)  
  goto routine1:  
else  
  goto routine2:
```

If more than one command line is to be associated with **else**, insert a line containing the { (open curly brace) character before the first command line and a line containing the } (close curly brace) character following the last command line.

For example:

```
if (integer > 3)  
  goto routine1:  
else  
  {  
    inc integer  
    goto routine2:  
  }
```

The **if** command may be used on the same line as **else**, for example:

```
if (N == 1)  
  X = 2  
else if (N == 2)  
  X = 4  
else  
  X = 1
```

## ENCRYPT

---

Syntax: **ENCRYPT** <result> <string> <key>

Encrypts a string, where

- <result> is a previously defined string variable (see **var**) which will store the encrypted string.
- <string> is a string or string variable containing the string to encrypt.
- <key> is one or more characters that are used to define how the string is encrypted. These can be any characters except nulls.

Each character in the string will be represented as two hexadecimal characters in the resulting encryption. The hexadecimal characters will vary according to the <key> characters specified. You can use the **decrypt** command to convert the encrypted string back to normal characters.

The *Error Numbers* section lists the possible error numbers for this command.

## ERRORCODE

---

Syntax: **ERRORCODE** <variable>

This command specifies the type of error code that will be returned when an error is encountered in the script program. Specifying an integer variable will return an error ID number, while a string variable will return an error message. Refer to the *Script Error Trapping Functions* section later in this chapter for details.

## ERRORLINE

---

Syntax: **ERRORLINE** <variable>

This command will return the line number of the last script program error. Refer to the *Script Error Trapping Functions* section later.

## EXIT

---

Syntax: **EXIT**

Terminates the script program but does not exit TeemTalk.

## FACT

---

Syntax: **FACT**

This will cause TeemTalk to reassert the original setup configuration it had when you first installed it.

## FILE CLOSE

---

Syntax: **FILE CLOSE** <handle>

Closes the file with the specified handle where <handle> is the name of the integer variable assigned by the **file open** command.

The *Error Numbers* section lists the possible error numbers for this command.

## FILE COPY

---

Syntax: **FILE COPY** <filename> <destname>

This will copy the file specified by the <filename> string or string variable to the specified destination, where the <destname> string or string variable can be a full path name, just a filename, or just a path. For example:

**file copy "myfile.tmp" "/distrib/source/work/newfile.tmp"**

will create the file **newfile.tmp** in the directory **/distrib/source/work**. The *Error Numbers* section lists the possible error numbers for this command.

## FILE DELETE

---

Syntax: **FILE DELETE** <filespec>

Deletes the file specified by the string or string variable <filespec>. Refer to the *Error Numbers* appendix for a list of possible error numbers for this command.

## FILE OPEN

---

Syntax: **FILE OPEN** <variable> <filespec> <operation>

This command is used to open a specified file, assign an integer to identify the file, and specify whether the file is to be created, read, written to, or any combination of these, where

<variable> is a previously defined integer variable (see **var**) which will be used to store an integer which will identify the file for future commands. (This will be referred to as the <handle> in other file command descriptions.)

<filespec> is a string or string variable containing the name of the file on which operations will be performed. This can be a file which already exists or a new file which will be created if **C** is specified in the following <operation> string.

<operation> is a string or string variable containing any of the following characters which define the type of operation that is to be performed on the file: **R**

(read) **W** (write) and **C** (create). If this string is omitted the program will assume that the file will have read and write operations performed on it.

For example, to create the file **myfile.doc** and enable characters to be written to it, the following line would be entered, specifying that the integer identifying the file is to be stored in the variable called **id**:

```
file open id myfile.doc "cw"
```

The *Error Numbers* section lists the possible error numbers for this command.

---

## FILE READ

---

Syntax: **FILE READ <handle> <variable> <length>**

This will read a specified number of characters from a file and assign them to a variable, where

- <handle>** is the integer variable specified by the **file open** command and used to identify the file.
- <variable>** is a previously defined variable (see **var**) which will be used to store the characters. Note that if the variable was created in the integer format, the decimal value of the first two characters will be assigned to it.
- <length>** is the number of characters to be read if the variable is in string format. If the variable is in integer format the number of characters that will be read is two, and if in floating point number format the number of characters that will be read is four.

More than one variable (and length specifier if a string variable) may be specified to store successive blocks of characters from the file.

The following example will read ten characters from the file identified by the handle **id** and assign them to the string variable **char1**, then read the next six characters and assign them to the string variable **char2**, and finally read the next 2 characters and place them in the integer variable **number**:

```
file read id char1 10 char2 6 number
```

The *Error Numbers* section lists the possible error numbers for this command.

---

## FILE RENAME

---

Syntax: **FILE RENAME <filename> <newname>**

This will rename the file specified by **<filename>** to that of **<newname>**. Both filenames can be specified as strings or string variables.

## FILE RGET

---

Syntax: **FILE RGET** <handle> <variable>

This will get a single character from a file and assign it to a variable, where

- <handle> is the integer variable specified by the **file open** command and used to identify the file.
- <varname> is a previously defined variable (see **var**) which will be used to store the character. Note that if the variable was created in the integer format, the decimal value of the character will be assigned to it.

More than one variable may be specified to store successive characters from the file.

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FILE SEEK

---

Syntax: **FILE SEEK** <handle> <position> [<count>]

This command specifies the location within a file at which character read and write operations are to occur, where

- <handle> is the integer variable specified by the **file open** command and used to identify the file.
- <position> defines the approximate position in the file as **start**, **current** or **end** (which may be abbreviated to **S**, **C** and **E**, respectively).
- <count> defines the particular character location as the number of characters from the <position> setting, which is entered as a minus or plus figure (e.g. **+6** or **-25**). This parameter may be omitted.

The following example will move the location to twelve characters from the end of the file identified by the handle **id**:

```
file seek id e -12
```

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FILE STAT

---

Syntax: **FILE STAT** <filename> [<size> <mode> <modtime> <uname> <gname>]

This will get the statistics of the specified file and place them in the previously defined string variables, where

- <filename> is a string or string variable that specifies the name of the file. This is the only entry that must be specified, the others are optional.

- <size>** is a previously defined string or integer variable (see **var**) which will store the size of the file.
- <mode>** is a previously defined string variable which will store the mode.
- <modtime>** is a previously defined string variable which will store the time of the last modification.
- <uname>** is a previously defined string or integer variable which will store the user name.
- <gname>** is a previously defined string or integer variable which will store the group name.

Note that if you require a value which follows one or more that are not required, you will still need to supply variables for them. For example, if you only wanted the time that the file was last modified, you would need to specify a variable for **<size>** and **<mode>** as well as **<modtime>**.

You can use this command to check for the existence of a file. For example, to check the existence of the file **myfile.tmp**, you could specify the following:

```
file stat "myfile.tmp"  
if errno == 13  
  wrt "did not find myfile.tmp"
```

---

## FILE WPUT

---

Syntax: **FILE WPUT <handle> <variable>**

This will write the character assigned to a variable to a file, where

- <handle>** is the integer variable specified by the **file open** command and used to identify the file.
- <variable>** is a previously defined variable (see **var**) which contains the character to be written.

More than one variable may be specified to write successive characters to the file.

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

---

## FILE WRITE

---

Syntax: **FILE WRITE <handle> <variable> <length>**

This will write characters assigned to a variable to a file, where

- <handle>** is the integer variable specified by the **file open** command and used to identify the file.

**<variable>** is a previously defined variable (see **var**) which contains the characters to be written to the file.

**<length>** is the number of characters to be written if the variable is in string format. If the variable is in integer format the number of characters that will be written is two, and if in floating point number format the number of characters that will be written is four.

More than one variable may be specified to write successive blocks of characters to the file.

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FSTR

---

Syntax: **FSTR <align> <new> <orig> <length>**

This command enables you to format a string of characters to a required length by adding spaces and aligning the text to the left, right or centre, where

**<align>** is a single character that indicates the text alignment:

- C** centred
- L** left aligned
- R** right aligned

**<new>** is a predefined string variable (see **var**) which will contain the formatted string.

**<orig>** is a string or variable containing the text to be formatted.

**<length>** is the length of the string required. If this is shorter than the length of the source string then the entire source string will be copied to the destination variable without formatting.

The following example will copy the string contained in the variable **orig** to the variable **new**, add spaces to make it 20 characters long and make the text right aligned:

```
fstr r new orig 20
```

## FTP CD

---

Syntax: **FTP CD LOCAL <directory path>**  
**FTP CD REMOTE <directory path>**

This FTP file transfer command enables you to change the current local or remote directory. The directory path must be enclosed by double quotes. The following entries are also valid: '.' and '..'. Note that **ftp cd local** will not affect the user's working directory. Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTP CONNECT

---

Syntax: **FTP CONNECT** <system> <host> [<login> <password> <account>]

This enables you to make a host connection for FTP file transfer.

The <system> entry specifies the type of operating system used by the remote host and must be one of the following entered exactly as shown and enclosed by double quotes:

|                     |                    |                  |                        |
|---------------------|--------------------|------------------|------------------------|
| <b>Auto</b>         | <b>NT</b>          | <b>IBM (MVS)</b> | <b>IBM (Interlink)</b> |
| <b>VAX UCX V1</b>   | <b>UNIX</b>        | <b>Dos</b>       | <b>Other</b>           |
| <b>VAX UCX V2</b>   | <b>Tandem</b>      | <b>HP3000</b>    |                        |
| <b>VAX UCX V3</b>   | <b>VAX TCPWare</b> | <b>AS400</b>     |                        |
| <b>VAX MultiNet</b> | <b>Prime</b>       | <b>KNET/MVS</b>  |                        |

**Auto** will cause FTP to automatically select the appropriate operating system and this setting will be suitable in most cases. Note that some DOS based FTP servers cannot automatically be resolved, so it is advisable to select DOS when you know the target server is based on a DOS machine. **VAX UCX** applies to versions higher than V2. Only choose **Other** if none of the other selections work.

Any of the <login>, <password> and <account> parameters may be omitted, but if a specified parameter follows then an empty string must be entered for the omitted parameter(s). The following example specifies the host as **pericom**, omits the login parameter, specifies a **password** and omits the account:

```
ftp connect "Auto" "pericom" "" "password"
```

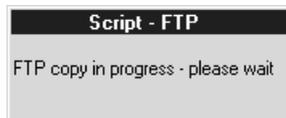
Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTP COPYDLG

---

Syntax: **FTP COPYDLG** <ON/OFF>

When set to **ON**, this command will cause a message box to be displayed when a file is being transferred indicating that the transfer is in progress. The box will be cleared from the display once the transfer is completed.







Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

### FTP GET

---

Syntax: **FTP GET** [**<mode>**] **<remote file>** [**<local file>**]

This will transfer a file from the currently connected host, as initiated by the **ftp connect** command, where

- <mode>** sets the transfer mode to **ASCII**, **BINARY** or **TENEX**. This can be omitted if the correct mode is already set.
- <remote file>** is the name of the remote file to be transferred, which can include the full directory path.
- <local file>** can be used to specify a local filename and directory path for the transferred file. This should be specified if you are transferring a file from a VAX system.

The following example will set the transfer mode to binary and transfer the file **yourfile.tmp**:

```
ftp get binary "yourfile.tmp"
```

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

### FTP PUT

---

Syntax: **FTP PUT** [**<mode>**] **<local file>** [**<remote file>**]

This will transfer a file to the currently connected host, as initiated by the **ftp connect** command, where

- <mode>** sets the transfer mode to **ASCII**, **BINARY** or **TENEX**. This can be omitted if the correct mode is already set.
- <local file>** is the name of the local file to be transferred.
- <remote file>** can be used to specify a remote filename for the transferred file.

The following example will set the transfer mode to ASCII and send the file **myfile.tmp**:

```
ftp put ascii "myfile.tmp"
```

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTP RM

---

Syntax: **FTP RM LOCAL** <filespec>  
**FTP RM REMOTE** <filespec>

This FTP file transfer command will remove the specified local or remote file. Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTP SET

---

Syntax: **FTP SET** <mode>

This sets the file transfer mode to **ASCII**, **BINARY** or **TENEX**. Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTP TOOL

---

Syntax: **FTP TOOL** <boolean>

This will display or close the FTP dialog box.

## FTP WD

---

Syntax: **FTP WD LOCAL** <variable>  
**FTP WD REMOTE** <variable>

This FTP file transfer command will get the local or remote working directory and place it in a previously defined string variable. Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTU CANCEL

---

Syntax: **FTU CANCEL**

This will release the current links between TeemTalk and the file transfer utility initiated previously by the **ftu initiate** command. Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTU GET

---

Syntax: **FTU GET** <variable> <groupID> <paramID> [<subparamID>]

This command enables you to get information on a particular setting, where

<variable> is a previously defined string variable (see **var**) which will store the information.

- <groupID>** identifies a group of parameters.
- <paramID>** identifies a particular parameter, or in the case of **Parameter** settings a sub-group of parameters.
- <subparamID>** identifies a particular parameter when the **<groupID>** is specified as **Parameter**, otherwise this is omitted.

For example, to get the current retry limit setting and place it in the previously defined variable called **limit** you would enter the following:

**ftu get limit parameter general retrylimit**

where **parameter** is the group ID, **general** is the parameter ID for a sub-group of parameters, and **retrylimit** is the sub-parameter ID. Refer to the section entitled *FTU SET & GET Parameters* later in this chapter for a complete list of valid group and parameter IDs.

If the setting of a parameter under investigation is a control character, the decimal value of the character will be stored in the variable. For example, if the setting is **DEL** (i.e. decimal 127), then "**127**" will be returned.

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTU INITIATE

---

Syntax: **FTU INITIATE**

Initiates a link to the file transfer utility. If it cannot get a link, then it will try to launch the utility and re-initiate the link. Once a link is established, TeemTalk will be in file transfer mode and normal data transmission with the host will not be possible until the **ftu cancel** command is sent. Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## FTU SET

---

Syntax: **FTU SET <groupID> <paramID> [<subparamID> <value>]**

This command enables you to set file transfer setup parameters and specify operations to perform on a remote host, where

- <groupID>** identifies a group of parameters.
- <paramID>** identifies a particular parameter, or in the case of **Parameter** settings a sub-group of parameters.
- <subparamID>** identifies a particular parameter when the **<groupID>** is specified as **Parameter**, otherwise this is omitted.
- <value>** is the value to be set if required.

For example, to specify that the Kermit protocol end of line character for outbound packets is DEL, you would enter the following:

```
ftu set parameter kermit seol "del"
```

where **parameter** is the group ID, **kermit** is the parameter ID, **seol** is the sub-parameter ID, and **"del"** is the value.

To specify that you are to receive files you would enter the following, where **how** is the group ID and **receive** is the parameter ID:

```
ftu set how receive
```

Refer to the section entitled *FTU SET & GET Parameters* later in this chapter for a complete list of valid group IDs, parameter IDs and values.

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

### ***Remote Operations***

The following is an example of how you would get a file from a remote host:

```
ftu set remote get    - this sets the remote option  
ftu set how remote  - this sets the transfer method  
ftu start "my.txt"
```

This requires that the remote host kermit is running in server mode, which can be achieved by using the **put** command as follows:

```
put "kermit_n_r"  
put "server_n_r"
```

To change the directory on the remote host you will need to include a password following the name of the directory within the string, separating it from the directory name by the | (vertical line) character, with no spaces before or after it (unless a space character is part of the password). For example:

```
ftu set remote change dir  
ftu set how remote  
ftu start "\\ipc\textfiles|password"
```

If the | character is not included the command will fail.

*Note: Only the remote operation commands listed in the FTU SET & GET Parameters section of this chapter are valid.*

## FTU START

---

Syntax: **FTU START** <command>

This will start a file transfer where <command> can either be a variable or a string which usually relates to the name of the file to send or receive.

The **ftu set** command is used prior to **ftu start** to specify whether you are sending or receiving a file. For example:

```
ftu set how send  
ftu start "fred.doc"
```

If **how** is set to **remote** or **local**, this would invoke the limited operations available. For example:

```
ftu set how local  
ftu start "c:\transfer\files"
```

would change the local directory to that specified, and:

```
ftu set remote change dir  
ftu set how remote  
ftu start "\sparc\transfer_files\password"
```

would change the remote directory to that specified.

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

*Note: The **remote finish**, **bye** and **logout** commands will ignore the string associated with **ftu start**.*

## GETINI

---

Syntax: **GETINI** <section> <entry> <variable> [<ini file>]

This enables you get a setting from an initialization file, where

- <section> is a string or string variable (see **var**) which specifies the heading of the command group, for example **tt07w** for TeemTalk-07W initialization commands in the **WIN.INI** file, or **startup,default** for TeemTalk-07W32 initialization commands in the **TT07W.INI** file.
- <entry> is a string or string variable which specifies the initialization command, for example **protocol**.
- <variable> is the name of a previously defined string or integer variable which will be used to store the setting.
- <ini file> is a string or string variable which specifies the name of the initialization file. This may be omitted if it is the default file **WIN.INI** (Windows 3.1) or **TT07W.INI** (Windows 95/NT).

The following example will get the current protocol setting from the Windows 3.1 **WIN.INI** file and place it in the string variable **netprot**.

```
getini "tt07w" "protocol" netprot
```

The following example will get the current protocol setting from the Windows 95 or NT **TT07W.INI** file and place it in the string variable **netprot**.

```
getini "startup,default" "protocol" netprot "tt07w.ini"
```

The *Error Numbers* appendix lists the possible error numbers for this command.

---

## GOSUB

Syntax: **GOSUB** <label>

The program goes to the subroutine beginning at the line with the specified label. If it does not exist, the program continues with the next line. The program returns to the line following the **gosub** when a **return** command is encountered.

---

## GOTO

Syntax: **GOTO** <label>

The program unconditionally goes to the line with the specified label. If the label does not exist, the program continues with the next line.

---

## HCMP

Syntax: **HCMP** <delay> <string1> [<string2>...]

Enter the terminal emulation and wait for the first occurrence of any of the specified strings from the host, where

<delay> is the number of seconds to wait for a string to be matched. This must be an integer value, not a variable. If a matching string is received within the time period, the system flag is set to **TRUE**, otherwise the flag is set to **FALSE**. The program then continues with the next line. If the time delay value is zero, the terminal emulation will be maintained indefinitely until a string is matched.

<string#> can be a literal string or a variable (including integer and floating point). Any number of strings can be entered. There is no case sensitivity.

The **errno** (error number) variable will indicate the number of the string matched according to its position after the **hcmp** command. Use the **brf** and **brt** commands to test for success or failure.

## HGET

---

Syntax: **HGET** <variable> [, <count> [, <timeout>]]

This gets one or more characters from the host and assigns them to the specified variable, where

<count> is the number of characters to get from the host. If omitted then one character will be returned.

<timeout> is the maximum number of seconds during which the operation has to take place before timing out.

If the format of the variable is not a string (as defined by the **var** command) then the ASCII decimal value of the character(s) will be placed in the variable (e.g. **A** will be **65**).

*Note: You can use the **conv** command to convert the decimal value to an ASCII character.*

Examples:

**hget char** Gets one character from the host.

**hget str, 5** Gets five characters from the host.

**hget str, 5, 10** Gets five characters from the host, timeout after 10 seconds.

The system flag will be set to **FALSE** and the **errno** (error number) variable will be set to 0 if a timeout occurs, or **TRUE** and **errno** set to 1 if the command was successful.

## HRCV

---

Syntax: **HRCV IGNORE**  
**HRCV PROCESS**  
**HRCV HOLD**

This command specifies what happens to characters received from the host while the script program is running.

When set to **ignore**, characters will be thrown away. When set to **process**, characters will be processed as normal. When set to **hold**, characters will be held but not actioned until an **hrcv process** command is received, except for the **hget** or **hcmp** commands, which will be processed. The **ignore**, **process** and **hold** settings can be abbreviated to **I**, **P**, and **H**, respectively.

## IF

---

Syntax: **IF <condition>**

Informs the program to perform the command(s) on the following line(s) if the specified condition is true. The **else** command may be used in conjunction with **if**.

For example:

```
if (integer > 3)  
  goto routine1:  
else  
  goto routine2
```

If more than one command line is to be associated with **if**, insert a line containing the { (open curly brace) character before the first command line and a line containing the } (close curly brace) character following the last command line. For example:

```
if (integer > 3)  
  {  
    inc integer  
    goto routine1:  
  }  
else  
  goto routine2:
```

The **if** command may be used on the same line as **else**, for example:

```
if (N == 1)  
  X = 2  
else if (N == 2)  
  X = 4  
else  
  X = 1
```

**If** and associated **else** commands may be nested up to 32 times.

## INC

---

Syntax: **INC <variable> [<variable>...]**

Increases the integer or floating point number assigned to the specified variables by one.

## INP

---

Syntax: **INP <string> <variable>**

Displays the string as a prompt and causes all following characters typed from the keyboard to be assigned to the specified variable until the **Enter** or **Return** key is pressed. All future references to the string may be made using the variable name.

For example, to ask the user to enter his name and cause the name to be assigned to the variable **UserID**, the following line would be entered:

```
inp "Please Enter Your Name: " UserID
```

## KACT

---

Syntax: **KACT** <string>

This command will cause the script program to perform the function of a key as if a terminal operator had pressed the key on the keyboard. This can be used on its own or in conjunction with the **kraw** command to accept and perform an intercepted keystroke. The <string> must contain the virtual key name of the key to be actioned. For example:

```
KACT "VK_RETURN"
```

will cause the script program to perform the function of the **Return** key. Refer to the *Virtual Key Names* appendix for a list of key names that can be used.

## KBD

---

Syntax: **KBD** <integer> [<string>]

Sends all following characters typed from the keyboard to the host until the **Enter** or **Return** keys are pressed, where

<integer> is an actual integer or an integer variable which enables or disables the keyboard-entered characters from being displayed. When the integer is **0** the characters will not be displayed. Any integer higher than **0** will cause the characters to be displayed.

<string> enables a prompt to be displayed so that you can indicate what the user has to enter from the keyboard. This may be omitted.

The following example will ask the user to enter his name and will display and send the input to the host:

```
kbd 1 "Please Enter Your Name: "
```

## KGET

---

Syntax: **KGET** <variable>

This gets a character from the keyboard and assigns it to the specified variable. If the format of the variable (defined by **var**) is not a string then the decimal value of the character will be placed in the variable (e.g. **A** will be placed as **65**). You can use the **conv** command to convert the format of the variable if required.

## KINTERCEPT

---

Syntax: **KINTERCEPT** <boolean>

When enabled, this command will cause all keystrokes entered by the terminal operator to be intercepted and stored in a queue so that the script program can take action on them using the **kraw** and **kact** commands. You should disable this function before the script program is exited.

## KPRESS

---

Syntax: **KPRESS** <key identifier>

This command will cause the script program to perform the function of the key identified by its reference number or virtual key name. Refer to the *Key Reference Numbers* appendix for a list of valid key reference numbers, and the *Virtual Key Names* appendix for a list of key names that can be used.

## KRAW

---

Syntax: **KRAW** <string>

When keyboard intercept is enabled by **kintercept**, the **kraw** command is used to retrieve each keystroke in turn from the input queue so that it can either be processed, accepted or rejected by the script program. A string can be intercepted by placing this command in a loop.

Keystrokes are represented as virtual key names in the same format as a key macro. For example:

"**VK\_F1**"     the **F1** key has been pressed.

"**A VK\_F1**"    the **F1** key has been pressed with the **Alt** key held down.

If a key has not been pressed then **kraw** will return a null string.

## KRCV

---

Syntax: **KRCV IGNORE**  
**KRCV PROCESS**  
**KRCV HOLD**

This command specifies what happens to characters received from the keyboard while the script program is running.

When set to **ignore**, characters will be thrown away. When set to **process**, characters will be processed as normal. When set to **hold**, characters will be held but not actioned until a **krcv process** command is received, except for the **kget** and **kbd** commands, which will be processed. The **ignore**, **process** and **hold** settings can be abbreviated to **I**, **P**, and **H**, respectively.

## KSTR

---

Syntax: **KSTR** <string>

This command will treat the characters contained in the string or string variable as macros to be performed. Refer to the **Macros Settings** dialog box description in the *Setup Menus* chapter for the macro definition format.

More than one macro definition can be specified in the same string or variable. The string example below will perform the function of the keys **Alt + F4** pressed together followed by the **A** key:

```
kstr "<ALT+F4><A>"
```

## LAUNCH

---

Syntax: **LAUNCH** <application>

This command enables you launch an application, where

<application> is either the name of the application (and directory path if required) enclosed by double quotes, or the name of a string variable containing the application name.

You can cause the application to run in a minimized state when launched by including the string **"min"** after <application>.

The following example will launch the application Excel so that it runs in a minimized state:

```
launch "h:\excel\excel.exe" "min"
```

## LEN

---

Syntax: **LEN** <length> <string>

This command will count the number of characters including spaces contained in a string and store the result in a variable, where:

<length> is a predefined variable (see **var**) which will store the length of the string.

<string> is the string of characters and spaces to be counted.

## LET

---

Syntax: **LET** <expression>

This is an assignment statement which enables you to specify a value or change one value to another. For example:

```
let X = Y
```

## LOW

---

Syntax: **LOW** <result> <string>

This command will convert all uppercase characters in a string to lowercase and place the resulting string in a variable, where

- <result> is a predefined string variable (see **var**) which will store the converted string.
- <string> is the string or variable containing the characters to be converted to lowercase.

## LSTR

---

Syntax: **LSTR** <variable> <string> <end>

This command will copy a number of characters from the start of a string and place them in a variable, where

- <variable> is a predefined string variable (see **var**) which will store the copied characters.
- <string> is the source string from which characters are to be copied.
- <end> is the numeric position of the last character to be copied, where the first character in the string is 1. If this value is greater than the number of characters in the string then the destination variable will include padded spaces so that it matches the number of characters requested.

## MSGBOX

---

Syntax: **MSGBOX** <message> <buttons> <result>

This command enables you to display a simple message box with buttons, where

- <message> is the message as specified by a string delimited by double quotes or the name of a previously defined string variable (see **var**).
- <buttons> is an integer or integer variable containing a value which specifies the buttons to be displayed (see following table).
- <result> is a previously defined integer variable which is used to store the value of the button that is pressed by the user.

The value of the <buttons> integer is found by adding together the value of each button required from the following table:

|         |          |         |           |
|---------|----------|---------|-----------|
| Ok:     | <b>1</b> | Retry:  | <b>16</b> |
| Cancel: | <b>2</b> | Abort:  | <b>32</b> |
| Yes:    | <b>4</b> | Ignore: | <b>64</b> |
| No:     | <b>8</b> |         |           |

For example, to specify that the **Cancel** and **Retry** buttons are to be displayed, the **<buttons>** integer would be **18**.

Only the following combinations of buttons are allowed:

Ok  
Ok & Cancel  
Yes & No  
Yes, No & Cancel  
Retry & Cancel  
Abort, Retry & Ignore

The following example will display a message box containing the message **Do you wish to continue?** and the buttons **Yes** and **No**, and cause the value of the button pressed by the user to be stored in the integer variable **result**.

**msgbox "Do you wish to continue?" 12 result**

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## MSTR

---

Syntax: **MSTR <variable> <string> <start> [<end>]**

This command will copy a number of characters from within a string and place them in a variable, where

- <variable>** is a predefined string variable (see **var**) which will store the copied characters.
- <string>** is the source string from which characters are to be copied.
- <start>** is the numeric position of the first character to be copied, where the first character in the source string is 1. This value must be a number greater than 0.
- <end>** is the numeric position of the last character to be copied, where the first character in the source string is 1. If this is omitted then all the characters to the end of the string will be copied. If this value is greater than the number of characters in the source string then the destination variable will include padded spaces so that it matches the number of characters requested. If this value is less than the **<start>** value then it will result in an empty string.

## ONERROR

---

Syntax: **ONERROR** <action>

This command will perform the specified action when it encounters an error while the script program is running, where <action> can be one of the following:

- REPORT** will display a message box indicating the type of error and the program line that caused it.
- IGNORE** will ignore any errors encountered in the program.
- GOTO <label>** will cause the program to go to the line with the specified label when an error is encountered.
- GOSUB <label>** will cause the program to go to the line with the specified label when an error is encountered and then **return** to the line following the error.

Refer to the *Script Error Trapping Functions* section later in this chapter.

## PACK

---

Syntax: **PACK** <result> <string>

This command will remove redundant spaces between ASCII characters in a string, together with any spaces and tabs before and after the string, and place the resulting string in a variable.

- <result> is a previously defined string variable (see **var**) which will contain the modified string.
- <string> is the string or variable containing the string to be packed.

This is useful to prevent an otherwise valid user response becoming invalid due to extra spaces. See also **packtab**.

## PACKTAB

---

Syntax: **PACKTAB** <result> <string>

This command will reduce multiple spaces and/or tabs in a string into a single tab, convert single spaces into tabs if a digit follows, and place the resulting string in a variable.

- <result> is a previously defined string variable (see **var**) which will contain the modified string.
- <string> is the string or variable containing the string to be packed.

This is useful for making data suitable for a spreadsheet. See also **pack**.

## PARSE

---

Syntax: **PARSE** <string> <variable1> <key> <variable2>

This command enables you parse a string using a specified key (e.g. a single character or a string of characters), where

- <string> is the string or variable containing the string to be parsed.
- <variable#> are two previously defined string variables (see **var**) into which characters from the string will be placed.
- <key> is a single character or a string of characters which signifies that all following characters in the string are to be placed in the second variable.

If the string contains the key, then all the characters preceding the first instance of the key will be placed in the string variable specified by <variable1>, and all following characters will be placed in the second variable. If the key is not found in the string, then all the characters will be placed in the first variable.

Refer to the *Error Numbers* section later in this chapter for a list of possible error numbers for this command.

## PASSWORD

---

Syntax: **PASSWORD** <title> <caption> <entry> [<x> <y>]

This command enables you to display a simple dialog box for password entry where keyboard entered text is displayed as asterisks. The box will have a specified title, contain two buttons (**Ok** and **Cancel**) and a single line text box with a specified prompt. The command parameters are as follows:

- <title> is the text to be displayed in the title bar of the dialog box, as specified by a string delimited by double quotes or the name of a previously defined string variable (see **var**).
- <caption> is the text that will appear to the left or above the text box, as specified by a string delimited by double quotes or the name of a previously defined string variable.
- <entry> is a previously defined string variable which is used to store the text entered in the text box by the user, but only if the **Ok** button is pressed, otherwise the variable is set to NULL.
- <x> <y> specify the horizontal and vertical position of the top left corner of the dialog box in relation to the top left corner of the screen in pixels. These can be integers or variables.

The following example will display a dialog box with the title **Password** containing a text box with the prompt **Enter your password:**, and cause the text entered in the

text box by the user to be stored in the string variable **result** when the **Ok** button is pressed.

**password "Password" "Enter your password:" result 100 100**

The *Error Numbers* section later in this chapter lists possible error numbers.

---

## PGET

Syntax: **PGET** <variable> <groupID> <paramID>

This command enables you to get most terminal emulation setup parameters and the current values of some attributes, where

<variable> is a previously defined variable (see **var**).

<groupID> identifies a group of parameters (e.g. host settings).

<paramID> identifies the particular parameter (e.g. baud rate).

For example, to get the current baud rate setting and place it in the previously defined variable called **speed** you would enter the following:

**pget speed host baud**

where **host** is the group ID and **baud** is the parameter ID.

Refer to the section entitled *PGET & PSET Parameters & Values* at the end of this chapter for a complete list of group ID's, parameter ID's and values that will be returned. Note that the values will be returned in their full, non-abbreviated versions, with the abbreviation characters in uppercase and the remainder in lowercase. If you require the value to be returned entirely in uppercase, use the **-su** command line option or **ScriptUppercase=on** initialization file command.

---

## PSET

Syntax: **PSET** <groupID> <paramID> <value>

This command enables you to set most terminal emulation setup parameters and the current values of some attributes, where

<groupID> identifies a group of parameters (e.g. host settings).

<paramID> identifies the particular parameter (e.g. baud rate).

<value> is the value to be set (e.g. 9600).

For example, to specify that the baud rate is to be set to 4800 you would enter the following:

**pset host baud 9600**

where **host** is the group ID, **baud** is the parameter ID, and **9600** is the value.

More than one setting within the same group of parameters can be specified on the same line. For example, to set the baud rate to 9600 and the serial port device to /dev/ttya you would enter the following:

```
pset host baud 9600 port "/dev/ttya"
```

In this case the group ID only has to be entered once at the beginning of the line, followed by each set of parameter IDs and values.

You can also use the **pset** command to define key macros. The following example will define the **F1** key so that when it is pressed in conjunction with the **Shift** and **Ctrl** keys (**s c**) it will send the string in the double quote characters:

```
pset macro s c XK_F1 "logon_n_r"
```

Note that when you want to enter a control character in a definition you must use the three digit decimal value of the ASCII character preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**. You cannot use a control key character equivalent (e.g. **^M** for **CR**) in a **PSET** definition.

Refer to the section entitled *PGET & PSET Parameters & Values* at the end of this chapter for a complete list of group ID's, parameter ID's and values, and the abbreviations that can be used.

## PUT

---

Syntax: **PUT <string>**  
**PUT <variable>**

Send the string(s) within double quote characters or variable(s) to the host.

## QUIT

---

Syntax: **QUIT**

The script program terminates and TeemTalk is exited.

## RAND

---

Syntax: **RAND <variable>**

This will put the next random number into the variable, which can be a floating point number or string variable. The number will be less than 1. If an integer variable is used then the variable will always be 0 (zero). See also the description of the **seed** command.

## RDPXY

---

Syntax: **RDPXY** <variable> <row> <column> <count>

This causes the program to read a specified number of characters from the specified row and column position in the display buffer and assign them to a previously defined string variable. Note that the row and column position is relative to the display buffer, not the current screen display. The top row in the display buffer designated as row 0. For example, to read twenty characters beginning at row 3 and column 18 and place them in the variable called **name** you would enter the following:

```
rdpxy name 3 18 20
```

## RDT

---

Syntax: **RDT** <variable> <count>

This causes the program to read a specified number of characters from the current cursor position (wherever it is in the display buffer) and assign them to a previously defined variable. For example, to cause twelve characters from the cursor position to be assigned to the variable called **name** you would enter the following:

```
rdt name 12
```

## RDTXY

---

Syntax: **RDTXY** <variable> <row> <column> <count>

This causes the program to read a specified number of characters from the specified row and column position on the current screen display and assign them to a previously defined string variable. Note that the row and column position is relative to the current screen display, not the display buffer. The top row displayed on the screen is designated as row 0.

For example, to read twenty characters beginning at row 3 and column 18 and place them in the variable called **name** you would enter the following:

```
rdtxy name 3 18 20
```

## REPLAY

---

Syntax: **REPLAY EMUL** <filespec>  
**REPLAY HOST** <filespec>  
**REPLAY CANCEL**

The **replay** command is used to replay the contents of a file previously created using the **capture** command. The replay can be directed to both the emulator and host (**replay emul**) or just to the host (**replay host**). To cancel the replay, issue a **replay cancel** command.

## RETURN

---

Syntax: **RETURN**

Terminates a **gosub** command, returning the program to the line following the most recently encountered **gosub** which has not yet been terminated.

## RST

---

Syntax: **RST**

This will reset TeemTalk and cause it to assert the last saved setup configuration.

## RSTR

---

Syntax: **RSTR** <variable> <string> <number>

This command will copy a number of characters from the end of a string and place them in a variable, where

<variable> is a predefined string variable (see **var**) which will store the copied characters.

<string> is the source string from which characters are to be copied.

<number> is the number of characters to be copied. If this value is greater than the number of characters in the string then the whole string will be copied.

## SAVESET

---

Syntax: **SAVESET**

This will save the current setup configuration so that it can be reasserted when TeemTalk is subsequently reset or loaded.

## SEED

---

Syntax: **SEED** <integer>

This will reset the random number generator seed to the integer specified as a string or variable. See also the description of the **rand** command.

## SETINI

---

Syntax: **SETINI** <section> <entry> <setting> [<ini file>]

This enables you set a setting in an initialization file, where

- <section> is a string or string variable which specifies the heading of the command group, for example **tt07w** for TeemTalk-07W initialization commands in the **WIN.INI** file, or **startup,default** for TeemTalk-07W32 initialization commands in the **TT07W.INI** file.
- <entry> is a string or string variable which specifies the initialization command, for example **protocol**.
- <setting> is the setting of the command, which may be a string, integer, or variable.
- <ini file> is a string or string variable which specifies the name of the initialization file. This may be omitted if it is the default file **WIN.INI** (Windows 3.1) or **TT07W.INI** (Windows 95 or NT).

The following example will set the **protocol** setting in the Windows 3.1 **WIN.INI** file to **cterm**..

```
setini "tt07w" "protocol" "cterm"
```

The following example will set the **protocol** setting in the Windows 95 or NT **TT07W.INI** file to **tcpip**:

```
setini "startup,default" "protocol" "tcpip" "tt07w.ini"
```

The *Error Numbers* appendix lists the possible error numbers for this command.

## SUBTITLE

---

Syntax: **SUBTITLE** <string>

This enables you to change the subtitle portion of the title bar in the main window. The subtitle will be separated from the main title by a hyphen.

The specified subtitle can be a string delimited by double quotes or a variable. If no string is specified, the current contents of the title bar will remain unchanged. No error numbers will be generated.

## SWITCH

---

Syntax: (See below)

This is used to compare the value of a variable with a list of possible values and perform the commands specified for the matching case. The format is as follows:

```
SWITCH <variable>
{
  CASE <value1>
    <commands>
  CASE <value2> [<value3>...]
    <commands>
  [DEFAULT
    <commands>]
}
```

where

**<variable>** can be a string, integer or floating point variable containing the value to be matched.

{ and } mark the beginning and the end of the switch sequence. These must not be omitted.

**CASE <value#>** specifies a possible value for the variable, which can be a literal string, a variable or a number. Note that you can specify more than one value on the same line by separating each value by a comma and/or space. If the value of the variable matches the case value then the **<commands>** on the following line(s) will be performed.

**<commands>** specifies what the program must do if the case value on the previous line matches the variable value. On a successful match the program performs the specified commands and exits the switch process.

**DEFAULT** this is an optional entry which will cause the program to perform the following commands and exit the switch process if the variable value was not matched with any of the case values.

## SYSERR

---

Syntax: **SYSERR <boolean>**

This is used to enable or disable the display of error message boxes. The boolean value may be **0** or **1**, **No** or **Yes**, **False** or **True**, **OFF** or **ON**. The value may be abbreviated to the characters shown in uppercase.

## TCMP

---

Syntax: **TCMP** <delay> <row> <column> <string>

This will wait for the specified <string> to appear on the screen at the start location specified by <row> and <column>, where

<delay> is the number of seconds to wait for the specified string. If the string is received within the time period, the system flag is set to TRUE, otherwise the flag is set to FALSE. The program then continues with the next line. If the time delay value is zero, the program will wait indefinitely until the string is matched.

<string> can be a literal string or a variable (including integer and floating point). There is no case sensitivity.

Use the **brf** and **brt** commands to test for success or failure.

## TITLE

---

Syntax: **TITLE** <string>

This enables you to change the title displayed in the title bar of the main window.

The specified title can be a string delimited by double quotes or a variable. An invalid title will set the **errno** (error number) variable to **1**.

## TOOLBAR ADD

---

Syntax: **TOOLBAR ADD** <bitmap> <command>

This will add a button tool to the end of the current set of displayed buttons, where

<bitmap> is either a string containing the name of the bitmap file to use, or an integer which relates to the standard defined toolbar bitmaps in the order displayed in the **Button Tools** dialog box, the first being **0**, the second **1**, etc.

<command> can be a key macro string (as described in *The Toolbar* chapter), or an integer that relates to a standard command that is listed in the **Button Tools** dialog box as follows:

- |   |                            |
|---|----------------------------|
| 0 | New Connection dialog box  |
| 1 | Open Session dialog box    |
| 2 | Save Session As dialog box |
| 3 | Copy command               |
| 4 | Paste command              |
| 5 | File Transfer dialog box   |
| 6 | Run Script dialog box      |
| 7 | Printer Setup dialog box   |
| 8 | Print Screen dialog box    |

- 9 Attributes dialog box
- 10 Keyboard Macros dialog box
- 11 Soft Buttons dialog box
- 12 Mouse Button Actions dialog box
- 13 >> Increase window size command
- 14 << Decrease window size command
- 15 Button Tools dialog box
- 16 GErase command
- 17 DErase command
- 18 DVisib command
- 19 Zoom command (*except* TeemTalk-05W & -05W32)
- 20 Setup command
- 21 Dialog Settings dialog box
- 22 GIN Settings dialog box
- 23 Patterns command
- 24 View Up command (*except* TeemTalk-05W & -05W32)
- 25 View Down command (*except* TeemTalk-05W & -05W32)
- 26 Rst View command (*except* TeemTalk-05W & -05W32)
- 27 Def View command (*except* TeemTalk-05W & -05W32)
- 28 Overview command (*except* TeemTalk-05W & -05W32)
- 29 Reset command
- 30 Clear command
- 31 Help Index dialog box
- 32 Capture File dialog box
- 33 Replay File dialog box
- 34 Factory Default command
- 35 Save Session command
- 36 Startup Options dialog box
- 37 Cancel Capture command
- 38 Cancel Replay command
- 39 FTP file transfer dialog box
- 40 Print Buffer command
- 41 Auto Print command
- 42 Cancel Print command
- 43 Eject Page command
- 44 Cancel Script command
- 45 Exit command
- 46 Clipboard Text command
- 47 Clipboard Graphics command
- 48 Copy Rows command
- 49 Copy Columns command
- 50 Select All command
- 51 Emulation Settings dialog box
- 52 Host Settings dialog box
- 53 Terminal Settings dialog box
- 54 How To Use Help dialog box

|    |                            |
|----|----------------------------|
| 55 | About TeemTalk message box |
| 56 | Copy Reverse command       |
| 57 | Copy Mono command          |
| 58 | Copy Mono Reverse command  |
| 59 | Close Session command      |
| 60 | Copy Reverse command       |

---

## TOOLBAR DEL

---

Syntax: **TOOLBAR DEL** <position>

This will delete the tool button or space at the specified position in the toolbar, where

<position> is an integer that specifies the position in the toolbar where the button or space for deletion is located. The first item in the toolbar, whether it is a button or a space, is at position **1**. You must include any spaces in the count.

---

## TOOLBAR FIX

---

Syntax: **TOOLBAR FIX**

This will fix the toolbar under the menu bar.

---

## TOOLBAR FLOAT

---

Syntax: **TOOLBAR FLOAT**

This will cause the tool buttons to be displayed in a floating window.

---

## TOOLBAR HIDE

---

Syntax: **TOOLBAR HIDE**

This will remove the toolbar from the display.

---

## TOOLBAR INS

---

Syntax: **TOOLBAR INS** <position> <bitmap> <command>  
**TOOLBAR INS** <position> [space]

This enables you to insert a tool button or space immediately before the specified position in the toolbar, where

<position> is an integer that specifies the position in the toolbar before which the button or space is to be inserted. The first item in the toolbar, whether it is a button or a space, is at position **1**. You must include any spaces in the count.

- <bitmap>** is either a string containing the name of the bitmap file to use, or an integer which relates to the standard defined toolbar bitmaps in the order displayed in the **Button Tools** dialog box, the first being **0**, the second **1**, etc.
- <command>** can be a key macro string (as described in *The Toolbar* chapter), or an integer that relates to a standard command that is listed in the **Button Tools** dialog box. Refer to the *Button Tool Command Selection* section later for a list of standard commands and related integers.
- [space]** entered as shown will insert a space before the specified position.

## UPP

---

Syntax: **UPP <result> <string>**

This command will convert all lowercase characters in a string to uppercase and place the resulting string in a variable, where

- <result>** is a predefined string variable (see **var**) which will store the converted string.
- <string>** is the string or variable containing the characters to be converted to uppercase.

## VAR

---

Syntax: **VAR \$<name> [<string>]**  
**VAR %<name> [<integer>]**  
**VAR !<name> [<floating point number>]**

Specifies one or more variable names for storing one of three types of variable. The value of the variable may be defined as part of the command or omitted for entering later, in which case the value will be zero or an empty string.

The name specified for a string variable must be immediately preceded by the **\$** (dollar) character. For example, to specify an empty string variable with the name **Identity** you would enter the following:

**var \$Identity**

The name specified for an integer variable must be immediately preceded by the **%** (percent sign) character. For example, to specify an integer variable with the name **number** and with a value of **3** you would enter the following:

**var %number 3**

The name specified for a floating point number (e.g. 0.45) variable must be immediately preceded by the **!** (exclamation mark) character. For example, to specify a floating point number variable with the name **float** and with a value of **0.45** you would enter the following:

**var !float 0.45**

All future references to a variable are made by using its name without the \$, % or ! variable type identifying characters.

*Note: You can convert the type of data (string, integer, floating point number) from one variable to another using **conv**.*

You can specify more than one variable name (and value) on the same line. Variable names are linked to their assigned values by an equals sign (spaces are optional), and each variable name (with value) is separated from the next by a comma or/and space. For example:

```
var %integer1 = 32, %integer2, $string1 = "Hello", $string2
```

Variables that are not assigned a value will be given NULL for strings or 0 (zero).

You can incorporate a special variable called **errno** in your script file which will be used to store a number indicating the result of a command (i.e. success or type of failure). The **errno** variable is an integer variable which is already defined as part of the script language, that is, you do not need to use the **var** command to include it in your script file. When the command is successful, the number **0** will be assigned to **errno**. Refer to the section entitled *Error Numbers* later in this chapter for more details.

---

**WAIT**

Syntax: **WAIT <time>**

Causes the host to wait for the specified time in seconds. The default time is one second.

---

**WHILE**

Syntax: **WHILE <condition>**

Informs the program to perform the command(s) on the following line(s) while the specified condition is true. For example:

```
while (integer < 10)  
  inc integer
```

If more than one command line is to be associated with **while**, insert a line containing the { (open curly brace) character before the first command line and a line containing the } (close curly brace) character following the last command line.

For example:

```
while (integer < 10)  
  {  
    inc integer
```

```
wrt "Amount = " integer  
}
```

**While** commands may be nested up to 32 times.

## **WRT**

---

Syntax: **WRT** <string(s)>

Displays string(s) delimited by double quote characters at the current cursor position. Variables (such as **identity** in the example below) can also be included.

The following example will display **User =** followed by the contents of the variable **identity** and then perform a line feed (**\_n**) and carriage return (**\_r**).

```
wrt "User = ", identity, "_n_r"
```

## Error Numbers

---

You can incorporate a special variable called **errno** in your script file which will be used to store a number indicating the result of a command (i.e. success or type of failure). The **errno** variable is an integer variable which is already defined as part of the script language, that is, you do not need to use the **var** command to include it in your script file. When the command is successful, the numeric value **0** will be assigned to **errno**.

The following list shows the possible error numbers for various commands and their meaning.

### CLIPBD EMPTY

---

- 0** The command was successful.
- 1** Invalid parameter in the command string.
- 2** Cannot empty the clipboard, possibly because someone else has opened it.
- 3** Failed to close the clipboard.

### CLIPBD READ

---

- 0** The command was successful.
- 1** Invalid parameter in the command string.
- 2** Cannot read the data in the clipboard.
- 3** Failed to close the clipboard.
- 4** Cannot open the clipboard, possibly because someone else has opened it.
- 5** Clipboard data in unrecognisable format.

### CLIPBD WRITE

---

- 0** The command was successful.
- 1** Invalid parameter in the command string.
- 2** Cannot write the data to the clipboard.
- 3** Failed to close the clipboard.
- 4** Cannot open the clipboard, possibly because someone else has opened it.

### DDE

---

- 0** The command was successful.
- 1** The command failed.

### DECRYPT & ENCRYPT

---

- 0** The command was successful.
- 1** The command failed.

## DIALOGUE

---

- 0 The command was successful.
- 1 Invalid parameter in the command string.
- 2 Cancel button pressed.
- 3 Unable to create the dialog box.

## FILE

---

- 0 The command was successful.
- 1 Invalid sub-command (e.g. must be **file read** and not **file fred**, etc.).
- 2 Invalid variable for handle.
- 3 Invalid integer for handle.
- 4 **File copy, delete, open, or rename** command failed.
- 5 **File close** command failed.
- 6 Invalid variable for the **file read** or **rget** command.
- 7 Invalid string size for **file read** or **rget** command.
- 8 The end of the file has been reached - **file read** or **rget** command.
- 9 Invalid string size for **file write** command.
- 10 Write error - **file write** or **wput** command.
- 11 Invalid position type for **file seek** command.
- 12 Seek error - **file seek** command.
- 13 Could not supply statistics for file - **file stat** command.

## FTP

---

- 0 The command was successful.
- 1 Failed to connect - **ftp connect** command.
- 2 Failed to disconnect - **ftp connect** or **disconnect** command.
- 3 Failed to determine file system (UNIX/VAX) - **ftp connect** command.  
(Note that UNIX is the default.)
- 4 Not connected.
- 5 Invalid remote file - **ftp get, put, or rm** command.
- 6 Invalid local file - **ftp get, put, or rm** command.
- 7 Invalid remote directory - **ftp cd** command.
- 8 Invalid local directory - **ftp cd** command.
- 9 **dirnext** requires **dirfirst** beforehand.
- 10 Invalid local drive name.
- 11 Unknown mode specified.
- 12 Memory allocation failed.

## **FTU**

---

- 0 Transaction done.
- 1 Unknown packet.
- 2 Cancelled.
- 3 Too many retries.
- 4 File open error.
- 5 File read error.
- 6 File write error.
- 7 File close error.
- 8 Sending.
- 9 Send initialize error.
- 10 Send filename error.
- 11 Send data error.
- 12 Send end of file error.
- 13 Send end of transmission error.
- 14 Cannot initiate file transfer utility.
- 17 File transfer quitted.
- 18 Remote dialog open error.
- 19 Send command error.
- 20 Send error.
- 35 Cancelled (all transfer protocols except Kermit).
- 36 Timed out (all transfer protocols except Kermit).
- 37 Receive error (all transfer protocols except Kermit).
- 41 Packet sequence error (all transfer protocols except Kermit).
- 42 No files to send.
- 43 Printer open error (Kermit).
- 44 Transfer aborted (XMODEM, YMODEM, ZMODEM).

## **GET**

---

- 0 The command was successful.
- 1 Timeout.

## **GETINI & SETINI**

---

- 0 The command was successful.
- 1 Invalid parameter in the command string.

## **LAUNCH**

---

- 0 The command was successful.
- 1 Error.

## **MSGBOX**

---

- 0 The command was successful.
- 1 Invalid parameter in the command string.
- 2 Invalid button combination specified.
- 3 Unable to create the dialog box.

## **PARSE**

---

- 0 The command was successful.
- 1 Invalid parameter in the command string.
- 2 Item not located in the string.

## **PASSWORD**

---

- 0 The command was successful.
- 1 Invalid parameter in the command string.
- 2 Cancel button pressed.
- 3 Unable to create the dialog box.

## **TITLE**

---

- 0 The command was successful.
- 1 No title was specified.

## Script Error Trapping Functions

---

The integrity of a script program can be checked by using the **onerror**, **errorline** and **errorcode** commands. These enable you to quickly find any syntax errors within the program. The following program lines provide an example of their use:

```
var %integer1, $string1
onerror gosub errorhandler:

(put your program here)

** Error Handler **
errorhandler:
errorline string1
errorcode integer1
wrt "Error: ", integer1, " - ", string1, "_r_n"
return
```

### ONERROR

---

Syntax: **ONERROR** <action>

This command will perform the specified action when it encounters an error while the script program is running, where <action> can be one of the following:

- REPORT** will display a message box indicating the type of error and the program line that caused it.
- IGNORE** will ignore any errors encountered in the program.
- GOTO <label>** will cause the program to go to the line with the specified label when an error is encountered.
- GOSUB <label>** will cause the program to go to the line with the specified label when an error is encountered and then **return** to the line following the error.

### ERRORLINE

---

Syntax: **ERRORLINE** <variable>

This command will return the line number of the last error.

### ERRORCODE

---

Syntax: **ERRORCODE** <variable>

This command specifies the type of error code that will be returned when an error is encountered. Specifying an integer variable will return an error ID number, while a string variable will return an error message. The following list shows the ID codes and error messages that can be displayed, and their meanings.

| <b>ID</b> | <b>Message Displayed</b>          | <b>Meaning</b>   |
|-----------|-----------------------------------|--|
| 1         | <b>Syntax error</b>               | Illegal command or unrecognisable element.   |
| 2         | <b>Variable expected</b>          | Script expected a predefined variable (see <b>var</b> ).   |
| 3         | <b>Integer expected</b>           | Script did not receive an integer or integer variable.   |
| 4         | <b>String expected</b>            | Script did not receive a string or string variable.  |
| 5         | <b>Boolean expected</b>           | Script did not receive any of the following:<br><b>0</b> or <b>1</b> , <b>No</b> or <b>Yes</b> , <b>False</b> or <b>True</b> , <b>OFF</b> or <b>ON</b> .                         |
| 6         | <b>String variable expected</b>   | Script expected a string type variable (see <b>var</b> ).  |
| 7         | <b>Invalid expression</b>         | Script could not evaluate the expression given.  |
| 8         | <b>Invalid parameter</b>          | The command has a missing or incorrect parameter. Refer to the command description for the correct format.   |
| 9         | <b>Label not found</b>            | A command specified a label that had not been assigned to a program line, or the label was invalid. Refer to the description of labels in the <i>Syntax Conventions</i> section. |
| 10        | <b>Index out of range</b>         | An index given to a string command (e.g. <b>lstr</b> ) was out of range.   |
| 11        | <b>Illegal RETURN statement</b>   | There are no incompletd <b>gosubs</b> to return to.  |
| 12        | <b>Illegal button combination</b> | A button combination passed to a <b>dialogue</b> command was invalid.  |
| 13        | <b>Invalid key name</b>           | A key name or code was invalid or missing.   |
| 14        | <b>Invalid subcommand</b>         | An invalid subcommand was encountered (e.g. after <b>file</b> or <b>ftu</b> ).   |
| 15        | <b>Invalid GroupID</b>            | An invalid GroupID was specified for a <b>pget</b> , <b>pset</b> , <b>ftu set</b> or <b>ftu get</b> command.   |
| 16        | <b>Invalid ParamID</b>            | An invalid ParamID was specified for a <b>pget</b> , <b>pset</b> , <b>ftu set</b> or <b>ftu get</b> command.   |
| 17        | <b>Invalid SubParamID</b>         | An invalid SubParamID was specified for an <b>ftu set</b> or <b>ftu get</b> command.   |
| 18        | <b>Invalid button name</b>        | Invalid soft-button name specified in <b>pget</b> or <b>pset</b> command.  |
| 19+       | <b>Undefined error</b>            | Error has no definition.   |

---

## PSET & PGET Parameters & Values

---

This section lists the parameters available for the **PSET** and **PGET** commands, together with the values they will accept or return. Abbreviations are allowed in many cases, the essential characters being shown in UPPER CASE, with the rest of the value in lower case. The actual value may be specified in upper or lower case, may have double quotes to delimit it as a string, or may be a predefined variable. Note that the **PGET** values will be returned in their full, non-abbreviated versions, with the abbreviation characters in uppercase and the remainder in lowercase as shown in the listings. If you require the value to be returned entirely in uppercase, use the **-su** command line option or **ScriptUppercase=on** initialization file command.

The list of parameters and values are shown under the following headings:

|                   |  |
|-------------------|--|
| <b>GroupID</b>    | identifies a group of parameters (default is CURRENT). |
| <b>ParamID</b>    | identifies the particular sub-parameter.               |
| <b>Value</b>      | is the value to be set or returned.                    |
| <b>Qualifiers</b> | qualifies the following Parameter ID.                  |

The **Value** will be in one of the following formats if not specifically given:

|                  |   |
|------------------|---|
| <i>immediate</i> | no value required, 0 or 1 returned.                             |
| <i>boolean</i>   | 0 or 1, No or Yes, True or False, OFF or ON.                    |
| <i>string</i>    | any characters, with the maximum number given.                  |
| <i>range</i>     | one of a range of integers as shown (e.g. <i>range 0 -15</i> ). |

## Network Settings

---

|                                | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>   |
|--------------------------------|----------------|----------------|--|
| <b>Host Name:</b>              | NETwork        | NODEname       | <i>"string" max 80 chrs</i>  |
| <b>Protocol (Windows 3.1):</b> | NETwork        | PROTocol       | NONE<br>SERIAL<br>BAPI<br>BWTCP<br>CTERM<br>DOSLANTI<br>EICONX25<br>INFOConn<br>INT6B<br>INT14<br>IPXSPX<br>ISDN<br>LANMAn<br>LANWP<br>LAT<br>MULTILAN |

|                               | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>           |
|-------------------------------|----------------|----------------|------------------------|
|                               |                |                | NCSI                   |
|                               |                |                | NETBIOS                |
|                               |                |                | NETWLAT                |
|                               |                |                | NETWTCP                |
|                               |                |                | NEWT                   |
|                               |                |                | NSVT                   |
|                               |                |                | NWSAA                  |
|                               |                |                | OSLAN                  |
|                               |                |                | PATHWay                |
|                               |                |                | PCNFS                  |
|                               |                |                | PCTCP                  |
|                               |                |                | TEEMTALKOSI            |
|                               |                |                | TELAPI                 |
|                               |                |                | WINSOCK                |
| <b>(Windows 95/NT):</b>       | NETwork        | PROTOcol       | NONE                   |
|                               |                |                | SERIAL                 |
|                               |                |                | CTERM                  |
|                               |                |                | LAT                    |
|                               |                |                | MULTILAN               |
|                               |                |                | NETBIOS                |
|                               |                |                | TCPIP                  |
|                               |                |                | TEEMTALKOSI            |
|                               |                |                | WINSOCK                |
|                               |                |                | WINSOCK2               |
| <b>Port Number:</b>           | NETwork        | PORT           | <i>range 0 - 65535</i> |
| <b>Connect To Host:</b>       | NETwork        | CONNect        | <i>immediate</i>       |
| <b>Close Host Connection:</b> | NETwork        | CLOSE          | <i>immediate</i>       |

## Telnet Options

---

|                            | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>                |
|----------------------------|----------------|----------------|-----------------------------|
| <b>Telnet Port Number:</b> | NETwork        | TELNETPORT     | <i>range 0 - 65535</i>      |
| <b>Telnet Name:</b>        | NETwork        | TELNETNAME     | <i>"string" max 80 chrs</i> |
| <b>Suppress Echo:</b>      | NETwork        | ECHOSUPPRESS   | <i>boolean</i>              |
| <b>Force Binary Mode:</b>  | NETwork        | FORCEBINARY    | NO, DONT, DO                |
| <b>Force EOR Mode:</b>     | NETwork        | FORCEEOR       | NO, DONT, DO                |
| <b>For Break Send TM:</b>  | NETwork        | BREAKTM        | <i>boolean</i>              |
| <b>For Break Send CR:</b>  | NETwork        | BREAKCR        | <i>boolean</i>              |

## ISDN Settings

---

|                                 | <b>GroupID</b> | <b>ParamID</b>      | <b>Value</b>     |
|---------------------------------|----------------|---------------------|------------------|
| <b>Remote Dial Number:</b>      | NETwork        | ISDNNDIAL           | <i>"string"</i>  |
| <b>Remote Dial Sub Address:</b> | NETwork        | ISDNNDIALSUBADDRESS | <i>"string"</i>  |
| <b>Controller Card Number:</b>  | NETwork        | ISDNCONTROL         | <i>1 - 127</i>   |
| <b>B1 Physical Layer:</b>       | NETwork        | ISDNB1              | <i>0 - 5</i>     |
| <b>B2 Data Layer:</b>           | NETwork        | ISDNB2              | <i>0 - 5</i>     |
| <b>B3 Network Layer:</b>        | NETwork        | ISDNB3              | <i>0 - 3</i>     |
| <b>Local Dial Number:</b>       | NETwork        | ISDNLOCALNUMBER     | <i>"string"</i>  |
| <b>Local Dial Sub Address:</b>  | NETwork        | ISDNLOCALSUBADDRESS | <i>"string"</i>  |
| <b>Channel:</b>                 | NETwork        | ISDNUSECHAN         | <i>0 - 2</i>     |
| <b>B1 Baud Rate:</b>            | NETwork        | ISDNB1RATE          | <i>0 - 65535</i> |
| <b>B1 Data Bits:</b>            | NETwork        | ISDNB1LEVEL         | <i>0 - 65535</i> |
| <b>B1 Parity Bits:</b>          | NETwork        | ISDNB1PARITY        | <i>0 - 2</i>     |
| <b>B1 Stop Bits:</b>            | NETwork        | ISDNB1STOPS         | <i>0 - 2</i>     |
| <b>B2 Address A:</b>            | NETwork        | ISDNB2ADDRESS_A     | <i>0 - 255</i>   |
| <b>B2 Address B:</b>            | NETwork        | ISDNB2ADDRESS_B     | <i>0 - 255</i>   |
| <b>B2 Modulo (8/128):</b>       | NETwork        | ISDNB2MODULO        | <i>0 or 1</i>    |
| <b>B2 Window Size:</b>          | NETwork        | ISDNB2WINDOWSIZE    | <i>0 - 255</i>   |
| <b>B2 XID:</b>                  | NETwork        | ISDNB2XID           | <i>0 - 65535</i> |
| <b>B3 Lowest Incoming Ch.:</b>  | NETwork        | ISDNB3LIC           | <i>0 - 65535</i> |
| <b>B3 Highest Incoming Ch.:</b> | NETwork        | ISDNB3HIC           | <i>0 - 65535</i> |
| <b>B3 Lowest 2-Way Ch.:</b>     | NETwork        | ISDNB3LTC           | <i>0 - 65535</i> |
| <b>B3 Highest 2-Way Ch.:</b>    | NETwork        | ISDNB3HTC           | <i>0 - 65535</i> |
| <b>B3 Lowest Outgoing Ch.:</b>  | NETwork        | ISDNB3LOC           | <i>0 - 65535</i> |
| <b>B3 Highest Outgoing Ch.:</b> | NETwork        | ISDNB3HOC           | <i>0 - 65535</i> |
| <b>B3 Modulo (8/128):</b>       | NETwork        | ISDNB3MODULO        | <i>0 or 1</i>    |
| <b>B3 Window Size:</b>          | NETwork        | ISDNB3WINDOWSIZE    | <i>0 - 65535</i> |

## Printer Settings

---

|                                 | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>           |
|---------------------------------|----------------|----------------|------------------------|
| <b>Printer Device:</b>          | PRINTer        | DEVice         | <i>"string"</i>        |
| <b>Default Printer:</b>         | PRINTer        | DEFault        | <i>"string"</i>        |
| <b>Print Buffer</b>             | PRINTer        | BUFFER         | <i>immediate</i>       |
| <b>FormFeed Terminator:</b>     | PRINTer        | FFTerm         | <i>boolean</i>         |
| <b>Use Print Manager:</b>       | PRINTer        | USEPrintman    | <i>boolean</i>         |
| <b>Print Man. Pass Through:</b> | PRINTer        | PASSthru       | <i>boolean</i>         |
| <b>Translate National Chrs:</b> | PRINTer        | TRANSLate      | <i>boolean</i>         |
| <b>Seconds Close Delay:</b>     | PRINTer        | CLOSEDELAY     | <i>range 0 - 65535</i> |

|                                | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>                    |
|--------------------------------|----------------|----------------|---------------------------------|
| <b>Print Screen Method:</b>    | PRINTer        | SCREen         | TEXT, GRaph                     |
| <b>Use Printer Resolution:</b> | PRINTer        | USERESolution  | <i>boolean</i>                  |
| <b>Auto Wrap:</b>              | PRINTer        | AWRAP          | <i>boolean</i>                  |
| <b>Centre Image On Paper:</b>  | PRINTer        | CENTRE         | <i>boolean</i>                  |
| <b>Graphics Scaling:</b>       | PRINTer        | SCALE          | <i>range 1 - 100</i>            |
| <b>Graphics Image:</b>         | PRINTer        | GRMODE         | NORMal, SWAP,<br>MONO, MONOSwap |
| <b>Auto Print Mode:</b>        | PRINTer        | AUTO           | <i>boolean</i>                  |
| <b>Cancel Print:</b>           | PRINTer        | CANCEL         | <i>not applicable</i>           |
| <b>Eject Page:</b>             | PRINTer        | EJECTpage      | <i>not applicable</i>           |

## Serial Settings

---

|                         | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>   |
|-------------------------|----------------|----------------|--|
| <b>Use Serial Port:</b> | HOST           | USE            | <i>immediate</i>   |
| <b>Host Port:</b>       | HOST           | PORT           | COM1 - COM4 (16-bit)<br>COM1 - COM8 (32-bit)<br>None   |
| <b>Baud Rate:</b>       | HOST           | BAUDrate       | <i>16-bit:</i> 50, 75, 110, 134,<br>150, 200, 300, 1200,<br>1800, 2400, 4800, 9600<br>9600, 19200, 38400<br><i>32-bit:</i> 110, 300, 600,<br>1200, 2400, 4800,<br>9600, 19200, 38400,<br>57600, 115200 |
| <b>Parity:</b>          | HOST           | PARity         | None, Odd, Even,<br>Mark, Space  |
| <b>Flow Control:</b>    | HOST           | FLOWcontrol    | None, INPut, OUTput<br>INOUT, HARDware,<br>DTR   |
| <b>Data Bits:</b>       | HOST           | DATAbits       | 6, 7, 8  |
| <b>Stop Bits:</b>       | HOST           | STOPbits       | 1, 1.5, 2  |
| <b>Transmit Rate:</b>   | HOST           | TXLimit        | <i>range 0 - ?</i>   |
| <b>On Line:</b>         | HOST           | ONLine         | <i>boolean</i>   |
| <b>Local Echo:</b>      | HOST           | HALFDuplex     | <i>boolean</i>   |
| <b>Detect Carrier:</b>  | HOST           | DCDDetect      | <i>boolean</i>   |
| <b>Test for DCD:</b>    | HOST           | DCDTest        | <i>boolean</i>   |
| <b>Test for CTS:</b>    | HOST           | CTSTest        | <i>boolean</i>   |

## NCSI Settings

---

|                           | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>  |
|---------------------------|----------------|----------------|---|
| <b>Baud Rate:</b>         | NCSi           | BAUDrate       | 50, 75, 110, 134, 150,<br>300, 600, 1200, 1800,<br>2000, 2400, 3600,<br>4800, 7200, 9600,<br>19200, 38400, 57600,<br>115200 |
| <b>Parity:</b>            | NCSi           | PARity         | None, Odd, Even,<br>Mark, Space   |
| <b>Flow Control:</b>      | NCSi           | FLOWcontrol    | None, DTR, RTS<br>DTRRts<br>Xonxoff   |
| <b>Data Bits:</b>         | NCSi           | DATABits       | 5, 6, 7, 8  |
| <b>Stop Bits:</b>         | NCSi           | STOPbits       | 1, 1.5, 2   |
| <b>Show Port Details:</b> | NCSi           | PORTdetail     | <i>boolean</i>  |

## Save Session Settings

---

|                                | <b>GroupID</b> | <b>ParamID</b>  | <b>Value</b>   |
|--------------------------------|----------------|-----------------|----------------|
| <b>Save Keyboard Macros:</b>   | SESSion        | SAVEMacros      | <i>boolean</i> |
| <b>Save Soft Buttons:</b>      | SESSion        | SAVESoftbuttons | <i>boolean</i> |
| <b>Save Attributes:</b>        | SESSion        | SAVEAttrS       | <i>boolean</i> |
| <b>Save Window Metrics:</b>    | SESSion        | SAVEWindow      | <i>boolean</i> |
| <b>Save Text Rows:</b>         | SESSion        | SAVERows        | <i>boolean</i> |
| <b>Save Buffer Rows:</b>       | SESSion        | SAVEBuffer      | <i>boolean</i> |
| <b>Save Connection:</b>        | SESSion        | SAVEConnection  | <i>boolean</i> |
| <b>Save Terminal Settings:</b> | SESSion        | SAVETerminal    | <i>boolean</i> |

## Emulation Settings

---

|                        | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>  |
|------------------------|----------------|----------------|---|
| <b>Emulation:</b>      | EMULation      | MODE           | VT52, VT100<br>TEK, EDit<br>VT2207, VT2208<br>W3220 |
| <b>Code 1 Selects:</b> | EMULation      | CODE           | ANSI, VT2207<br>VT2208                              |
| <b>Terminal ID:</b>    | EMULation      | ID             | VT100<br>VT220                                      |

|                          | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>   |
|--------------------------|----------------|----------------|----------------|
| <b>Multinational:</b>    | EMULation      | MULTinational  | <i>boolean</i> |
| <b>Display Controls:</b> | EMULation      | CTRLdisplay    | <i>boolean</i> |

## Terminal Settings

---

|                                   | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>  |
|-----------------------------------|----------------|----------------|---|
| <b>Keyboard Language:</b>         | TERMinal       | KEYBoard       | AMerican / USa<br>BRITish / UK<br>FLemish<br>CANadian<br>DANish<br>FInnish<br>GERman<br>DUtch / HOLLand<br>ITAlian<br>SWFrench<br>SWGerman<br>SWEdish<br>NORwegian<br>FRench / BELgian<br>SPANish<br>PORtuguese |
| <b>LF Implies CR:</b>             | TERMinal       | NEWLine        | <i>boolean</i>  |
| <b>CR Implies LF:</b>             | TERMinal       | AUTOLF         | <i>boolean</i>  |
| <b>Ignore Deletes:</b>            | TERMinal       | IGNoredeletes  | <i>boolean</i>  |
| <b>Application Keypad:</b>        | TERMinal       | APPLKEYpad     | <i>boolean</i>  |
| <b>Application Cursor Keys:</b>   | TERMinal       | APPLCURSor     | <i>boolean</i>  |
| <b>Scroll Bar on Maximize:</b>    | TERMinal       | MAXSCrollbar   | <i>boolean</i>  |
| <b>Report Max. Line Length:</b>   | TERMinal       | REPLength      | <i>range 0 - 65535</i>  |
| <b>Bypass Cancel Character:</b>   | TERMinal       | BYpass         | <i>"string" max 2</i>   |
| <b>End Of Line Characters:</b>    | TERMinal       | EOLChar        | <i>"string" max 4</i>   |
| <b>End Of Message Characters:</b> | TERMinal       | EOMChar        | <i>"string" max 4</i>   |
| <b>End Of Message Frequency:</b>  | TERMinal       | EOMFReq        | Low<br>High   |
| <b>Terminal:</b>                  | TERMinal       | TYPe           | 4207<br>4105<br>4111  |
| <b>Answerback String:</b>         | TERMinal       | ANSWerback     | <i>"string" max 32</i>  |
| <b>Answerback Concealed:</b>      | TERMinal       | CONCEAL        | <i>boolean</i>  |

## Dialog Settings

---

|                               | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>  |
|-------------------------------|----------------|----------------|---|
| <b>Burst Scroll:</b>          | DIALog         | BURSTscroll    | <i>boolean</i>  |
| <b>Auto Wrap:</b>             | DIALog         | WRAPeol        | <i>boolean</i>  |
| <b>Dialog Indices Locked:</b> | DIALog         | LOCKINDices    | <i>boolean</i>  |
| <b>Dialog Area Visible:</b>   | DIALog         | DAVISible      | <i>boolean</i>  |
| <b>Cursor Origin:</b>         | DIALog         | ORIGin         | ABSolute<br>RELative  |
| <b>Cursor Style:</b>          | DIALog         | CURSortype     | UNDERline<br>BLOCK  |
| <b>Columns:</b>               | DIALog         | COLUMNS        | 80, 132   |
| <b>Resize Font:</b>           | DIALog         | NOFONTRESIZE   | <i>boolean</i>  |
| <b>Rows:</b>                  | DIALog         | ROWS           | <i>range depends on<br/>font size &amp; resolution</i>          |
| <b>Dialog Area Lines:</b>     | DIALog         | DALines        | <i>range 2 - rows</i>   |
| <b>Dialog Area Buffer:</b>    | DIALog         | DABuffer       | <i>range 2 - 100</i>  |
| <b>Dialog Area Enabled:</b>   | DIALog         | DAENable       | <i>tt05w: boolean<br/>tt07w: boolean<br/>tt11w: range 0 - 1</i> |

## Gin Settings

---

|                               | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>                                   |
|-------------------------------|----------------|----------------|--|
| <b>Tablet Type:</b>           | GIN            | TABLet         | MM1201<br>MM1812<br>BITPad<br>CALcomp<br>MOUse |
| <b>Serial Port Device:</b>    | GIN            | PORT           | COM1, COM2<br>COM3, COM4<br>None               |
| <b>Gin Tablet Characters:</b> | GIN            | TABChars       | <i>"string" max 4 chars</i>                    |
| <b>Map Mouse To Joystick:</b> | GIN            | MAPmouse       | <i>boolean</i>                                 |

## Attribute Settings

---

### Colour Selection

|                         | GroupID    | ParamID   | Value                |
|-------------------------|------------|---|----------------------|
| <b>Map Value Red:</b>   | ATTRIBUTES | MAP##Red<br><i>(where ## is colour index in range 00 to 15)</i> | <i>range 0 - 100</i> |
| <b>Map Value Green:</b> | ATTRIBUTES | MAP##Green  | <i>range 0 - 100</i> |
| <b>Map Value Blue:</b>  | ATTRIBUTES | MAP##Blue   | <i>range 0 - 100</i> |
| <b>Screen Index:</b>    | ATTRIBUTES | BCKINDSCRN  | <i>range 0 - 15</i>  |

### Preferences

|                         | GroupID    | ParamID    | Value          |
|-------------------------|------------|------------|----------------|
| <b>Inverse Colours:</b> | ATTRIBUTES | INVColour  | <i>boolean</i> |
| <b>AutoColour:</b>      | ATTRIBUTES | AUTOcolour | <i>boolean</i> |

## ATTRIBUTE DISPLAY

You can disable one or more attributes associated with the following text foreground or background index commands by entering the following characters immediately after the colour index:

|          |                            |          |                             |
|----------|----------------------------|----------|-----------------------------|
| <b>B</b> | Disable bold attribute     | <b>I</b> | Disable inverse attribute   |
| <b>F</b> | Disable flashing attribute | <b>U</b> | Disable underline attribute |

For example, to make characters with the underline and bold attributes appear on the screen with the colour assigned to index 3 but not underlined or bold, you would issue the following command:

### PSET ATTRIBUTES FRGINDUNDBOLD 3UB

Characters with the bold attribute can be displayed as true bold instead of highlighted by including the + (plus) character immediately after the colour index.

The **Value** in the following tables consists of an integer in the range 0 to 15, specifying the colour index, which may be followed by any of the disable attribute characters described above if relevant.

### Foreground Indices Normal Display

|                         | GroupID    | ParamID     | Value               |
|-------------------------|------------|-------------|---------------------|
| <b>Normal Index:</b>    | ATTRIBUTES | FRGINDNORM  | <i>0 - 15[char]</i> |
| <b>Bold Index:</b>      | ATTRIBUTES | FRGINDBOLD  | <i>0 - 15[char]</i> |
| <b>Underline Index:</b> | ATTRIBUTES | FRGINDUNDER | <i>0 - 15[char]</i> |

|                                    | <b>GroupID</b> | <b>ParamID</b>  | <b>Value</b> |
|------------------------------------|----------------|-----------------|--------------|
| <b>Underline &amp; Bold Index:</b> | ATTRIBUTES     | FRGINDUNDBOLD   | 0 - 15[char] |
| <b>Flashing Index:</b>             | ATTRIBUTES     | FRGINDFLASH     | 0 - 15[char] |
| <b>Flash &amp; Bold Index:</b>     | ATTRIBUTES     | FRGINDFLBOLD    | 0 - 15[char] |
| <b>Flash &amp; Underline:</b>      | ATTRIBUTES     | FRGINDFLUNDER   | 0 - 15[char] |
| <b>Flash, Under. &amp; Bold:</b>   | ATTRIBUTES     | FRGINDFLUNDBOLD | 0 - 15[char] |

### Foreground Indices Inverse Display

|                                | <b>GroupID</b> | <b>ParamID</b>     | <b>Value</b> |
|--------------------------------|----------------|--------------------|--------------|
| <b>Normal Index:</b>           | ATTRIBUTES     | FRGINDINV          | 0 - 15[char] |
| <b>Bold Index:</b>             | ATTRIBUTES     | FRGINDINVBOLD      | 0 - 15[char] |
| <b>Underline Index:</b>        | ATTRIBUTES     | FRGINDINVUNDER     | 0 - 15[char] |
| <b>Underline &amp; Bold:</b>   | ATTRIBUTES     | FRGINDINVUNDBOLD   | 0 - 15[char] |
| <b>Flashing Index:</b>         | ATTRIBUTES     | FRGINDINVFLASH     | 0 - 15[char] |
| <b>Flash &amp; Bold Index:</b> | ATTRIBUTES     | FRGINDINVFLBOLD    | 0 - 15[char] |
| <b>Flash &amp; Underline:</b>  | ATTRIBUTES     | FRGINDINVFLUNDER   | 0 - 15[char] |
| <b>Flash, Under. Bold:</b>     | ATTRIBUTES     | FRGINDINVFLUNDBOLD | 0 - 15[char] |

### Background Indices Normal Display

|                                  | <b>GroupID</b> | <b>ParamID</b>  | <b>Value</b> |
|----------------------------------|----------------|-----------------|--------------|
| <b>Normal Index:</b>             | ATTRIBUTES     | BCKINDNORM      | 0 - 15[char] |
| <b>Bold Index:</b>               | ATTRIBUTES     | BCKINDBOLD      | 0 - 15[char] |
| <b>Underline Index:</b>          | ATTRIBUTES     | BCKINDUNDER     | 0 - 15[char] |
| <b>Underline &amp; Bold:</b>     | ATTRIBUTES     | BCKINDUNDBOLD   | 0 - 15[char] |
| <b>Flashing Index:</b>           | ATTRIBUTES     | BCKINDFLASH     | 0 - 15[char] |
| <b>Flash &amp; Bold Index:</b>   | ATTRIBUTES     | BCKINDFLBOLD    | 0 - 15[char] |
| <b>Flash &amp; Underline:</b>    | ATTRIBUTES     | BCKINDFLUNDER   | 0 - 15[char] |
| <b>Flash, Under. &amp; Bold:</b> | ATTRIBUTES     | BCKINDFLUNDBOLD | 0 - 15[char] |

### Background Indices Inverse Display

|                                | <b>GroupID</b> | <b>ParamID</b>     | <b>Value</b> |
|--------------------------------|----------------|--------------------|--------------|
| <b>Normal Index:</b>           | ATTRIBUTES     | BCKINDINV          | 0 - 15[char] |
| <b>Bold Index:</b>             | ATTRIBUTES     | BCKINDINVBOLD      | 0 - 15[char] |
| <b>Underline Index:</b>        | ATTRIBUTES     | BCKINDINVUNDER     | 0 - 15[char] |
| <b>Underline &amp; Bold:</b>   | ATTRIBUTES     | BCKINDINVUNDBOLD   | 0 - 15[char] |
| <b>Flashing Index:</b>         | ATTRIBUTES     | BCKINDINVFLASH     | 0 - 15[char] |
| <b>Flash &amp; Bold Index:</b> | ATTRIBUTES     | BCKINDINVFLBOLD    | 0 - 15[char] |
| <b>Flash &amp; Underline:</b>  | ATTRIBUTES     | BCKINDINVFLUNDER   | 0 - 15[char] |
| <b>Flash, Under. Bold:</b>     | ATTRIBUTES     | BCKINDINVFLUNDBOLD | 0 - 15[char] |

## Keyboard Macros

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Keyboard macros may be specified using Tektronix key reference numbers or virtual key names. A variable can also be specified for the **ParamID**.

|                           | <b>GroupID</b> | <b>Qualifier</b> | <b>ParamID</b> | <b>Value</b>     |
|---------------------------|----------------|------------------|----------------|------------------|
| <b>Delete All Macros:</b> | MACROs         | DELALL           |                | <i>immediate</i> |

The following commands use the Tektronix key reference numbers listed in the *Key Reference Numbers* appendix.

|                         | <b>GroupID</b> | <b>Qualifier</b> | <b>ParamID</b>   | <b>Value</b>           |
|-------------------------|----------------|------------------|------------------|------------------------|
| <b>Program Key:</b>     | MACROs         |                  | <i>key ref #</i> | <i>"string" max 80</i> |
| <b>Non-Volatile:</b>    | MACROs         | NV               | <i>key ref #</i> | <i>boolean</i>         |
| <b>Default Setting:</b> | MACROs         | DEFault          | <i>key ref #</i> | <i>immediate</i>       |

The following commands use the virtual key names listed in the *Virtual Key Names* appendix.

|                               | <b>GroupID</b> | <b>Qualifier</b>   | <b>ParamID</b>  | <b>Value</b>           |
|-------------------------------|----------------|--------------------|-----------------|------------------------|
| <b>Normal Key:</b>            | MACROs         | COMmand            | <i>key name</i> | <i>"string" max 80</i> |
| <b>Shifted Key:</b>           | MACROs         | Shift              | <i>key name</i> | <i>"string" max 80</i> |
| <b>Control + Key:</b>         | MACROs         | Ctrl               | <i>key name</i> | <i>"string" max 80</i> |
| <b>Control + Shift Key:</b>   | MACROs         | Ctrl Shift         | <i>key name</i> | <i>"string" max 80</i> |
| <b>Alt + Key:</b>             | MACROs         | Alt                | <i>key name</i> | <i>"string" max 80</i> |
| <b>Non-Vol. Normal:</b>       | MACROs         | NV                 | <i>key name</i> | <i>boolean</i>         |
| <b>Non-Vol. Shifted:</b>      | MACROs         | NV Shift           | <i>key name</i> | <i>boolean</i>         |
| <b>Non-Vol. Control :</b>     | MACROs         | NV Ctrl            | <i>key name</i> | <i>boolean</i>         |
| <b>Non-Vol. Ctrl + Shift:</b> | MACROs         | NV Ctrl Shift      | <i>key name</i> | <i>boolean</i>         |
| <b>Non-Vol. Alt:</b>          | MACROs         | NV Alt             | <i>key name</i> | <i>boolean</i>         |
| <b>Default Normal:</b>        | MACROs         | DEFault            | <i>key name</i> | <i>immediate</i>       |
| <b>Default Shifted:</b>       | MACROs         | DEFault Shift      | <i>key name</i> | <i>immediate</i>       |
| <b>Default Control :</b>      | MACROs         | DEFault Ctrl       | <i>key name</i> | <i>immediate</i>       |
| <b>Default Ctrl + Shift:</b>  | MACROs         | DEFault Ctrl Shift | <i>key name</i> | <i>immediate</i>       |
| <b>Default Alt:</b>           | MACROs         | DEFault Alt        | <i>key name</i> | <i>immediate</i>       |

## European Currency Symbol

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|                     | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>    |
|---------------------|----------------|----------------|-----------------|
| <b>Sends:</b>       | EURosign       | SENds          | <i>"string"</i> |
| <b>Received As:</b> | EURosign       | RECEived       | <i>"string"</i> |
| <b>Printed As:</b>  | EURosign       | PRINts         | <i>"string"</i> |

## Soft Buttons

The **ParamID** setting SB#L# specifies the soft button number (SB#) which can be any number between 1 and 12 inclusive, and the level number (L#) which can be 1 to 4. For example, SB4L2 specifies soft button 4 on level 2.

|                                 | <b>GroupID</b> | <b>Qualifier</b> | <b>ParamID</b> | <b>Value</b>           |
|---------------------------------|----------------|------------------|----------------|------------------------|
| <b>Buttons Visible:</b>         | BUTTONs        |                  | VISible        | <i>boolean</i>         |
| <b>Program Button:</b>          | BUTTONs        | COMmand          | SB#L#          | <i>"string" max 80</i> |
| <b>Button Name:</b>             | BUTTONs        | NAME             | SB#L#          | <i>"string" max 10</i> |
| <b>Action Locally:</b>          | BUTTONs        | LOCal            | SB#L#          | <i>boolean</i>         |
| <b>Default Setting:</b>         | BUTTONs        | DEFault          | SB#L#          | <i>immediate</i>       |
| <b>No. Of Levels Displayed:</b> | BUTTONs        |                  | SHOWlevel      | <i>1 to 4</i>          |
| <b>Top Level:</b>               | BUTTONs        |                  | LEVel          | <i>1 to 4</i>          |
| <b>Level Title:</b>             | BUTTONs        |                  | L#TITLE        | <i>"string" max 7</i>  |

*Note: The Program Button qualifier 'COMmand' is optional.*

## Mouse Button Actions

The asterisk in the **ParamID** settings below must be substituted with the button or button and key combination identifiers as follows:

|                  | Left Button | Right Button |
|------------------|-------------|--------------|
| Normal:          | L           | R            |
| Shift:           | LS          | RS           |
| Control:         | LC          | RC           |
| Control + Shift: | LCS         | RCS          |
| Alt:             | LA          | RA           |
| Double Click:    | LDC         | RDC          |

|                             | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>     |
|-----------------------------|----------------|----------------|------------------|
| <b>User Defined String:</b> | MOUSE          | *_STRing       | <i>"string"</i>  |
| <b>Standard Function:</b>   | MOUSE          | *_ACTion       | <i>see below</i> |

The Standard Function Values are as follows:

|            |              |             |            |
|------------|--------------|-------------|------------|
| UNAssigned | EDITPaste    | SENDCR      | WORDselect |
| SELecttext | SHOWhotspots | SENDKEYword | COPYselect |
| EXTendsel  | ACTionhot    | MIDdlebutt  |            |
| EDITCopy   | MOVEcursor   | RECTselect  |            |

## Current Operating System Settings

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|  | GroupID | ParamID                 | Value                               |
|--|---------|-------------------------|-------------------------------------|
| <b>Current Disk Drive:</b>                                 | CURRent | DRIVE                   | "string" A - ?                      |
| <b>Current Directory:</b>                                  | CURRent | DIRECTory<br>PWD<br>CWD | "string" 255 chrs                   |
| <b>Current Environment:</b>                                | CURRent | ENVironment             | "string", "string"<br>max 255 chrs. |
| <b>Get Current Time:</b>                                   | CURRent | TIME                    | "string" HHMM                       |
| <b>Get Current Day:</b>                                    | CURRent | DAY                     | "string" 3 chrs                     |
| <b>Get Current Date:</b>                                   | CURRent | FULLDATE                | "string" YYYYMMDD                   |
| <b>Get Milliseconds Elapsed<br/>Since Windows Started:</b> | CURRent | TICKcount               | integer (See note.)                 |

*Note: When using the Get Milliseconds command, the value will return to 0 (zero) after approximately 49.7 days.*

## Current Display & Keyboard Settings

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|                                    | GroupID | ParamID         | Value  |
|------------------------------------|---------|-----------------|--|
| <b>Test If Keyboard Locked:</b>    | CURRent | KBDLock         | (boolean)  |
| <b>Test If Screen On Hold:</b>     | CURRent | HLDScreen       | (boolean)  |
| <b>Screen Visible:</b>             | CURRent | SCReen          | boolean  |
| <b>Menu Bar Visible:</b>           | CURRent | MENU            | boolean  |
| <b>Scroll Bar Visible:</b>         | CURRent | SCROLL          | boolean  |
| <b>Cursor Visible:</b>             | CURRent | CURSor          | boolean  |
| <b>Mouse Cursor Style:</b>         | MOUSE   | TYPE            | 0 - 10<br>(See table in Initialization Commands) |
| <b>Cursor Row Position:</b>        | CURRent | ROW             | range 0 - ?                                      |
| <b>Cursor Column Position:</b>     | CURRent | COLumn          | range 0 - ?                                      |
| <b>Reverse Video:</b>              | CURRent | REVERSEvideo    | boolean  |
| <b>Double Width Characters:</b>    | CURRent | DWline          | immediate  |
| <b>Single Width Characters:</b>    | CURRent | SWline          | immediate  |
| <b>Double Height Top Chars:</b>    | CURRent | DHTop<br>DOUBLE | immediate  |
| <b>Double Height Bottom Chars:</b> | CURRent | DHBOTTOM        | immediate  |
| <b>Clear All Attributes:</b>       | CURRent | CLR             | immediate  |
| <b>Underline Attribute:</b>        | CURRent | UL<br>UNDERline | immediate  |
| <b>Inverse Video Attribute:</b>    | CURRent | IV<br>INVERSE   | immediate  |

|  | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>     |
|--|----------------|----------------|------------------|
| <b>Invisible Attribute:</b>                  | CURRent        | BLank          |                  |
|  |                | SECurity       | <i>immediate</i> |
| <b>Flashing Attribute:</b>                   | CURRent        | FLashing       | <i>immediate</i> |
| <b>Highlight (Bold/Dim) Attribute:</b>       | CURRent        | BD             |                  |
|  |                | BOLD           |                  |
|  |                | HB             |                  |
|  |                | HALFBright     | <i>immediate</i> |
| <b>Normal (No Attributes):</b>               | CURRent        | NORMal         | <i>immediate</i> |
| <b>Line Drawing Character Set (VT Modes)</b> | CURRent        | LD             |                  |
|  |                | LINEdrawing    | <i>boolean</i>   |
| <b>Character Colour:</b>                     | CURRent        | FG             | BLAck            |
|  |                |                | BLUe             |
|  |                |                | RED              |
|  |                |                | GREen            |
|  |                |                | MAGenta          |
|  |                |                | CYAn             |
|  |                |                | YELlow           |
|  |                |                | WHite            |
| <b>Character Cell Colour:</b>                | CURRent        | BG             | BLAck            |
|  |                |                | BLUe             |
|  |                |                | RED              |
|  |                |                | GREen            |
|  |                |                | MAGenta          |
|  |                |                | CYAn             |
|  |                |                | YELlow           |
|  |                |                | WHItE            |

## FTU SET & GET Parameters

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This section lists the parameters available for the script language **FTU SET** and **FTU GET** commands, together with the values they will accept or return. The actual value may be specified in upper or lower case, may have double quotes to delimit it as a string, or may be a previously defined variable.

The list of parameters and values are shown under the following headings:

|                   |   |
|-------------------|---|
| <b>GroupID</b>    | identifies a group of parameters (default is <b>CURRENT</b> ).  |
| <b>ParamID</b>    | identifies a particular parameter, or in the case of <b>Parameter</b> settings a sub-group of parameters. |
| <b>SubParamID</b> | identifies a particular parameter for <b>Parameter</b> settings.  |
| <b>Value</b>      | is the value to be set or returned.   |

The **Value** will be in one of the following formats if not specifically given:

|                  |   |
|------------------|---|
| <i>immediate</i> | no value required, 0 or 1 returned.   |
| <i>boolean</i>   | 0 or 1, No or Yes, True or False, OFF or ON.                                  |
| <i>string</i>    | a control character (e.g. CR) or its decimal value enclosed by double quotes. |
| <i>range</i>     | one of a range of integers as shown (e.g. <i>range 1 -3</i> ).                |
| <i>integer</i>   | any number.   |

## Transfer Protocol Settings

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|                      | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>     |
|----------------------|----------------|----------------|------------------|
| <b>Kermit:</b>       | TRANSFER       | KERMIT         | <i>immediate</i> |
| <b>XMODEM:</b>       | TRANSFER       | XMODEM         | <i>immediate</i> |
| <b>XMODEM-1K:</b>    | TRANSFER       | XMODEM-1K      | <i>immediate</i> |
| <b>YMODEM Batch:</b> | TRANSFER       | YMODEMBATCH    | <i>immediate</i> |
| <b>ZMODEM</b>        | TRANSFER       | ZMODEM         | <i>immediate</i> |
| <b>ASCII</b>         | TRANSFER       | ASCII          | <i>immediate</i> |

## General Parameter Settings

---

|                         | <b>GroupID</b> | <b>ParamID</b> | <b>SubParamID</b> | <b>Value</b>        |
|-------------------------|----------------|----------------|-------------------|---------------------|
| <b>Timer:</b>           | PARAMETER      | GENERAL        | TIMer             | <i>boolean</i>      |
| <b>Warning Bell:</b>    | PARAMETER      | GENERAL        | BELI              | <i>boolean</i>      |
| <b>Discard Partial:</b> | PARAMETER      | GENERAL        | DIScard           | <i>boolean</i>      |
| <b>D. File Warning:</b> | PARAMETER      | GENERAL        | FILEWarn          | <i>boolean</i>      |
| <b>Send Delay:</b>      | PARAMETER      | GENERAL        | SENDDelay         | <i>range 0 - 63</i> |
| <b>Retry Limit:</b>     | PARAMETER      | GENERAL        | RETRYlimit        | <i>range 1 - 63</i> |

## Kermit Parameter Settings

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|                             | <b>GroupID</b> | <b>ParamID</b> | <b>SubParamID</b> | <b>Value</b>       |
|-----------------------------|----------------|----------------|-------------------|--------------------|
| <b>Start Of Packet (S):</b> | PARAMETER      | KERMIT         | SMARK             | <i>"string"</i>    |
| <b>Start Of Packet (R):</b> | PARAMETER      | KERMIT         | RMARK             | <i>"string"</i>    |
| <b>Timeout Secs (S):</b>    | PARAMETER      | KERMIT         | STIMEOUT          | <i>integer</i>     |
| <b>Timeout Secs (R):</b>    | PARAMETER      | KERMIT         | RTIMEOUT          | <i>integer</i>     |
| <b>Padding Count (S):</b>   | PARAMETER      | KERMIT         | SPADCOUNT         | <i>integer</i>     |
| <b>Padding Count (R):</b>   | PARAMETER      | KERMIT         | RPADCOUNT         | <i>integer</i>     |
| <b>Padding Char (S):</b>    | PARAMETER      | KERMIT         | SPADCHAR          | <i>"string"</i>    |
| <b>Padding Char (R):</b>    | PARAMETER      | KERMIT         | RPADCHAR          | <i>"string"</i>    |
| <b>EOL Char (Send):</b>     | PARAMETER      | KERMIT         | SEOL              | <i>"string"</i>    |
| <b>EOL Char (Receive):</b>  | PARAMETER      | KERMIT         | REOL              | <i>"string"</i>    |
| <b>Quote Char (S):</b>      | PARAMETER      | KERMIT         | SQUOTE            | <i>"string"</i>    |
| <b>Quote Char (R):</b>      | PARAMETER      | KERMIT         | RQUOTE            | <i>"string"</i>    |
| <b>Packet Size (S):</b>     | PARAMETER      | KERMIT         | SMAXPKTLEN        | <i>integer</i>     |
| <b>Packet Size (R):</b>     | PARAMETER      | KERMIT         | RMAXPKTLEN        | <i>integer</i>     |
| <b>Checksum Type:</b>       | PARAMETER      | KERMIT         | BLOCKCHECK        | <i>range 1 - 3</i> |
| <b>Prompt For Filename:</b> | PARAMETER      | KERMIT         | REQFILENAME       | <i>boolean</i>     |
| <b>Local File Name:</b>     | PARAMETER      | KERMIT         | LOCALFILE         | <i>"string"</i>    |

## ASCII Parameter Settings

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|                            | <b>GroupID</b> | <b>ParamID</b> | <b>SubParamID</b> | <b>Value</b>     |
|----------------------------|----------------|----------------|-------------------|------------------|
| <b>CR Translation (S):</b> | PARAMETER      | ASCII          | SENDCRTRANS       | <i>"string"</i>  |
| <b>CR Translation (R):</b> | PARAMETER      | ASCII          | RECVCRTRANS       | <i>"string"</i>  |
| <b>LF Translation (S):</b> | PARAMETER      | ASCII          | SENDLFTRANS       | <i>"string"</i>  |
| <b>LF Translation (R):</b> | PARAMETER      | ASCII          | RECVLFTRANS       | <i>"string"</i>  |
| <b>Line Pacing C. (S):</b> | PARAMETER      | ASCII          | SENDPACECHAR      | <i>"string"</i>  |
| <b>Line Pacing C. (R):</b> | PARAMETER      | ASCII          | RECVPACECHAR      | <i>"string"</i>  |
| <b>L. Pacing Time (S):</b> | PARAMETER      | ASCII          | SENDPACETIME      | <i>integer</i>   |
| <b>Expand Blank L.:</b>    | PARAMETER      | ASCII          | EXPANDBLANKS      | <i>immediate</i> |

## ZMODEM Parameter Settings

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|                             | <b>GroupID</b> | <b>ParamID</b> | <b>SubParamID</b> | <b>Value</b>                      |
|-----------------------------|----------------|----------------|-------------------|-----------------------------------|
| <b>Data Conversion (S):</b> | PARAMETER      | ZMODEM         | SFILECONV         | NONE<br>BINARY<br>ASCII<br>RESUME |
| <b>Data Conversion (R):</b> | PARAMETER      | ZMODEM         | RFILECONV         | <i>as above</i>                   |

|                              | <b>GroupID</b> | <b>ParamID</b> | <b>SubParamID</b> | <b>Value</b>   |
|------------------------------|----------------|----------------|-------------------|--|
| <b>Transfer Action (S):</b>  | PARAMETER      | ZMODEM         | SFILEACTION       | NONE<br>NEWLONG<br>CRCDIFF<br>APPEND<br>REPLACE<br>NEWER<br>LENGTH<br>ABSENT |
| <b>Transfer Action (R):</b>  | PARAMETER      | ZMODEM         | RFILEACTION       | <i>as above</i>  |
| <b>Receive Existing (S):</b> | PARAMETER      | ZMODEM         | SFILEEXIST        | <i>boolean</i>   |
| <b>Receive Existing (R):</b> | PARAMETER      | ZMODEM         | RFILEEXIST        | <i>boolean</i>   |
| <b>Change . to /:</b>        | PARAMETER      | ZMODEM         | SDOTTOSLASH       | <i>boolean</i>   |
| <b>Send Full Pathname:</b>   | PARAMETER      | ZMODEM         | SFULLNAME         | <i>boolean</i>   |
| <b>Remote Cmd (S):</b>       | PARAMETER      | ZMODEM         | SSTARTCMD         | <i>"string"</i>  |
| <b>Remote Cmd (R):</b>       | PARAMETER      | ZMODEM         | RSTARTCMD         | <i>"string"</i>  |
| <b>Window Size:</b>          | PARAMETER      | ZMODEM         | SWINDOW           | <i>integer</i>   |
| <b>Escape Control Codes</b>  | PARAMETER      | ZMODEM         | ESCONROLS         | <i>boolean</i>   |

## Kermit Remote Operations

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|                           | <b>GroupID</b> | <b>ParamID</b> | <b>Value</b>            |
|---------------------------|----------------|----------------|-------------------------|
| <b>How To Transfer:</b>   | HOW            | SEND           | <i>immediate</i>        |
|                           |                | RECEIVE        | <i>immediate</i>        |
|                           |                | REMOTE         | <i>immediate</i>        |
|                           |                | LOCAL          | <i>immediate</i>        |
| <b>Local Change Dir:</b>  | LOCAL          | CHANGE DIR     | <i>(see note below)</i> |
| <b>Remote Command:</b>    | REMOTE         | COMMAND        | <i>(see note below)</i> |
| <b>Remote Change Dir:</b> | REMOTE         | CHANGE DIR     | <i>(see note below)</i> |
| <b>Remote Get:</b>        | REMOTE         | GET            | <i>(see note below)</i> |
| <b>Remote Erase:</b>      | REMOTE         | ERASE          | <i>immediate</i>        |
| <b>Remote Finish:</b>     | REMOTE         | FINISH         | <i>immediate</i>        |
| <b>Remote Log Out:</b>    | REMOTE         | LOGOUT         | <i>immediate</i>        |
| <b>Remote Bye:</b>        | REMOTE         | BYE            | <i>immediate</i>        |

*Note: The ftu set remote get, ftu set remote/local change dir and ftu set remote command commands have their values specified on the ftu start command line.*

# 13

## *Dynamic Data Exchange*

---

**This chapter describes the support of dynamic data exchange (DDE) by TeemTalk.**

### *Introduction*

---

With the adoption of a standard user interface within the Microsoft Windows environment, personal computer users are becoming accustomed to the formalised methods by which keystrokes and mouse actions have a common effect, making it easier for users to become familiar with and switch between a whole range of unrelated but important applications.

This commonality extends beyond just the “look and feel” of applications. The ability to share data between totally independent applications must by now be a very familiar operation to many Windows users. Generally this is achieved by using the EDIT facilities of an application - either by copying, cutting or pasting portions of required information. These operations make use of the Windows system “clipboard”. The clipboard is a temporary repository of information that requires direct involvement of the user to initiate and complete transfer of text or graphics data. Such a means of transferring information is completely manual in its operation. The user issues a command in an application to copy or cut selected data to the clipboard, then in another application the user issues a command to paste the data from the clipboard into that application’s workspace.

Dynamic Data Exchange, or DDE, is an altogether more sophisticated means of sharing data between applications and, as suggested by its name, the ability to make “on the fly” links between applications becomes a reality. DDE is most appropriate for data exchanges that do not require ongoing user interaction. Normally an application provides a method for the user to establish the link between applications exchanging data. But once that link is established, the data exchanges between applications with no further user involvement. DDE can be used to implement a broad range of application features including:

- **Linking to real-time data**, such as stock market updates, scientific instruments, or process control.

- **Creating compound documents**, such as a word-processing document that includes a chart produced by a graphics program. Using DDE, the chart will change when the source data is changed, while the rest of the document remains the same.
- **Performing data queries between applications**, such as a spreadsheet querying a database application for accounts past due.

The following hypothetical example illustrates two co-operating Windows DDE applications, as seen from the user's point of view:

A Microsoft Excel spreadsheet user wishes to track the price of a particular stock on the Stock Exchange. The user also has the "Quote" application which gives access to Stock Exchange data. The DDE conversation between Excel and Quote takes place as follows:

1. The user initiates the conversation by supplying the name of the **application (Quote)** that will supply the data and the particular **topic of interest (PRICES)**. The resulting DDE conversation is used to request quotes on specific stocks.
2. Excel broadcasts the **application and topic names** to all DDE applications currently running in the system. Quote will respond, recognising that the target application name matches it's own, establishing a conversation with Excel relating to the PRICES topic.
3. The user can then request that the spreadsheet be automatically updated whenever a particular stock quotation changes by entering a spreadsheet formula in a cell. For example, the user could request an automatic update whenever a change in the selling price of EG's stock occurs by specifying the following Excel formula:

**= 'Quote'!PRICES!EG**

4. The user can terminate the automatic updating of the EG stock quotation at any time. Other data links that were established separately will still remain active under the same PRICES conversation.
5. The user can also terminate the entire conversation between Excel and Quote on the PRICES topic, so that no specific data links may be subsequently established on that topic without initiating a new conversation.

## DDE Terminology

---

In order to achieve a degree of understanding of the concepts of DDE, it is important to have a grasp of some of the terminology used to describe the protocol. Two applications co-operating in a DDE link are considered to be engaged in a DDE **conversation**. The application that initiates the conversation is the **client** application; and the responding application is the DDE **server** application. An application can be engaged in several conversations at the same time and is capable of acting both as a client in some conversations and as a server in others. The units of data that are passed between client and server DDE applications are identified by a three level hierarchy of **item**, **topic** and **application** name.

Each DDE conversation can be uniquely defined by the application name and topic. As discussed in the previous example, at the beginning of a DDE conversation the client and server agree upon the application name and topic. The application name is usually the name of the server application. The topic is a general classification of data within which multiple data items may be exchanged during conversation. For applications that operate on file-based documents, the topic is usually a file name. For other applications the topic is an application-specific name.

A DDE data item is the actual information related to the conversation topic that is exchanged between applications. Values for the data item can be passed from the server to the client, or from the client to the server.

Once a DDE conversation has begun, the client can establish one or more permanent data links with the server. A data link is a communication mechanism by which the server notifies the client that the value of a given data item has changed. The data link is considered as permanent because this notification process continues until the data link or the DDE conversation itself is terminated.

## Hot & Warm DDE Links

---

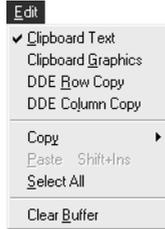
There are two kinds of permanent data links, **Hot** and **Warm**. In the case of a Warm data link, when the server application detects that the value of a data item has changed, it will notify the client that a change has occurred, but will not actually send the new value for that data item. The onus here is on the client application to decide whether or not it will take the new value. Only upon receipt of a positive response from the client will the server transmit the new value for the data item. In contrast to this, with a Hot link the server will automatically pass onto the client the new value for a data item immediately its value changes.

There are two methods acceptable to TeemTalk for setting up a link. The first is to use the **Edit** menu Copy and Paste facility to copy DDE header information to the clipboard, which a client application can then read and act upon appropriately. The second is for the client application to directly transmit a **WM\_DDE\_ADVISE** message to TeemTalk in the same format as defined for the clipboard copy.

## Using The Edit Menu DDE Functions

---

The most apparent DDE support provided by TeemTalk are the two entries in the **Edit** menu, **DDE Row Copy** and **DDE Column Copy**.



These two functions do not directly invoke a DDE link to another application. Instead, they ensure all the information that Microsoft Excel™ would require to establish a DDE link with TeemTalk is copied to the clipboard. This information consists of item, topic and application names that TeemTalk would recognise when asked to invoke a DDE link.

The reason why there are two DDE entries in the Edit menu is to provide the necessary formatting information to enable data to be pasted into a Microsoft Excel™ spreadsheet as a row or column of cells. When data is copied, the end of each line in the highlighted area of the display is terminated by a TAB character when **DDE Row Copy** is selected, and CR and LF characters when **DDE Column Copy** is selected. Each line is then treated as a separate portion of data or string, which can then be pasted into separate cells.

Excel recognises these strings as DDE formulae and more importantly as formulae that would provide data links to TeemTalk. Negotiation then goes on in the form of hidden windows messages between Excel and TeemTalk and eventually the link is established (in this situation Excel is the DDE Client with TeemTalk the Server).

DDE permanent links with TeemTalk are not just limited to Excel, however. With the knowledge of how to set up a permanent link, it is then possible to get TeemTalk to converse with almost anything.

To establish a link, a client DDE application requires information in the form of **application name**, **topic name** and **item name**. The **application name** is easy. If you're running TeemTalk-07W, then the application name is **TT07W**. Similarly, for TeemTalk-11W it is **TT11W**. The **topic name** is slightly more difficult as it varies according to the instance(s) of TeemTalk currently running within the Windows environment. By default the first instance has a topic of **TTLK1**, the second **TTLK2**, and so on. The easiest way to determine this is to perform a DDE copy of data to the clipboard within the instance of TeemTalk under question, then using the clipboard viewer (usually located within the Main Group box), determine what data TeemTalk has placed into the clipboard. The data is placed in the following form:

**=szAppName!szTopicName!szItemName**

Therefore the Topic for the particular instance of TeemTalk under question is given between the ! and the ! characters.

The last piece of information required to establish a permanent data link is the **item name** itself. TeemTalk treats the item name as a direct reference to a position on the display area. Each **ItemName** refers to a line on the screen and is sent in a string representation of the screen coordinates (top left is 0,0) followed by the length of the string. For example: '**23,5,8**' refers to the area of the screen located at column 24, row 6, and continues for 8 characters.

A typical copy to the clipboard, in the case of a **DDE Column Copy**, would look like this:

```
=tt07w!TTLK1!'18,1,8'  
=tt07w!TTLK1!'18,2,8'  
=tt07w!TTLK1!'18,3,8'  
=tt07w!TTLK1!'18,4,8'  
=tt07w!TTLK1!'18,5,8'
```

When a potential client application (for example Microsoft Excel) has this information pasted into its cells, a **WM\_DDE\_INITIATE** message is broadcast using the **szAppName** and **szTopicName** fields. All applications that recognize the two strings (this should be a particular instance of TeemTalk) will reply with a positive **WM\_DDE\_ACK** message, assuming of course that the current TeemTalk document name matches that of the DDE Topic Name.

Once the client receives the **WM\_DDE\_ACK**, it will send a **WM\_DDE\_ADVISE** message to TeemTalk. Depending upon the information provided by the client, within its **ADVISE** message's Data block, TeemTalk will then provide updates reflecting any change to the data using the **WM\_DDA\_DATA** message, sending the **ItemName** as an identifier to the particular area on the screen that has changed. Either a NULL data item will be sent, informing the client that the particular piece of information has changed and allowing it to transmit a **WM\_DDE\_REQUEST** message using the **ItemName** to get the data from TeemTalk when it wants to (i.e. a Warm link), or the data will be sent directly (Hot link).

## Direct Initiation Of A DDE Link

An application that knows the area of the TeemTalk screen that contains data of interest to it can directly initiate a DDE link to TeemTalk using the appropriate **szAppname** and **szTopicName**. Data messages can then proceed as described in the previous section, using **szItemName(s)** to reflect the area of the screen. This method is adopted by Excel when a particular spreadsheet that contains these command strings is recalled or reopened using the **File** menu. As long as the **AppName** and **DocName (TopicName)** match, then TeemTalk can then start sending fresh updates to Excel, once the initial (**WM\_DDE\_ADVISE**) preamble is successfully completed.

## File Transfer

---

TeemTalk for Windows 3.1 (not Windows 95 or NT) supports DDE links with its file transfer executable, **TTFLER.EXE**, distributed with the standard TeemTalk package. Without getting too deep into the internal windows messages that are transmitted, the link between TeemTalk and **TTFLER** can briefly be summarised as follows.

All data communications between the two applications are Cold links. That is, each exchange of data needs to be invoked via an explicit request for it from one or the other partners. TeemTalk in fact initiates the link and as such is considered to be the Client. Once the link is established, TeemTalk does not try and display or act upon any subsequent data it receives from the currently connected host. All data is deemed to be of importance to the file transfer utility and so is just buffered up and sent across the DDE link when requested to do so. In a similar fashion, the file transfer utility also has a monopoly on the transmission of data, so all input to TeemTalk is ignored, except for that sent to it via the DDE link, which will then be directed on to the host. This situation continues until the File Transfer Utility sends a message to TeemTalk that it has finished, which then allows TeemTalk to revert to its normal mode of operation.

## Slave Mode

---

TeemTalk for Windows 3.1 (not Windows 95 or NT) provides a Slave mode which allows another Windows based application to send formatted data to be interpreted by TeemTalk. For example, a Windows based package could be written to send Tektronix 4207 escape sequences which could be interpreted by TeemTalk-07W, and thereby the application could use the capabilities of TeemTalk-07W to display the resultant image.

One way that a process can act as a DDE client to TeemTalk is by initiating a DDE link specifying a particular topic of "Slave", coded as follows:

```
atomApplication = GlobalAddAtom("TT07W");
atomTopic = GlobalAddAtom("Slave");
SendMessage(
    -1,
    WM_DDE_INITIATE,
    hwndClientDDE,
    MAKELONG(atomApplication, atomTopic)
);

GlobalDeleteAtom(atomApplication);
GlobalDeleteAtom(atomTopic);
```

In this example, connection would be attempted between the client and the TeemTalk-07W program, assuming that this was named **TT07W.EXE**.

## Data Transmission Over A Slave DDE Link

Once initiated, TeemTalk enters Slave mode, diverting all input from the keyboard, for example to the Client application, and permitting data to be sent to it from the Client. Data coming from TeemTalk will be sent in the form of a DDE **POKE** message. A suitable way of accepting this is outlined below.

```
DDEWndProc(HWND hWnd, unsigned message, WORD wParam, LONG lParam)
{
    .
    .
    switch (message)
    {
        .
        .
        case WM_DDE_POKE:
            ClientReceivedPoke(hWnd, (HWND)wParam, lParam);
            break;
        .
        .
    }
    .
    .
}

ClientReceivedPoke(
    HWND hWnd,
    HWND hWndPartnerDDE,
    LONG lParam
)
{
    HANDLE          hPokeData;
    DDEPOKE FAR *  lpPokeData;
    ATOM            atomItem;
    char            szItemName[ITEM_NAME_MAX_SIZE];

    hPokeData = LOWORD(lParam);
    atomItem = HIWORD(lParam);

    GlobalGetAtomName(atomItem, szItemName, ITEM_NAME_MAX_SIZE);
    if (!(lpPokeData = (DDEPOKE FAR *)GlobalLock(hPokeData))
        || lpPokeData->cfFormat != CF_TEXT
        || (PartnerSentData(szItemName, lpPokeData->Value) == FALSE))
    {
        PostMessage(hWndPartnerDDE, WM_DDE_ACK, hWnd,
                    MAKELONG(0, atomItem));
        return;
    }
    /* Save value of fRelease, since pointer may be invalidated
       by GlobalUnlock */
    bRelease = lpPokeData->fRelease;
}
```

```
GlobalUnlock(hPokeData);

if (bRelease)
{
    GlobalFree(hPokeData);
}
PostMessage(
    hWndPartnerDDE,
    WM_DDE_ACK,
    hWnd,
    MAKELONG(0x8000, atomItem)
);

return;
}
```

The important call here is **PartnerSentData**, which actually does the processing of the received data. The **lpPokeData->Value** parameter, although defined in the **DDE.H** file as a character array containing 1 character, serves as a pointer to a larger block of data defined as follows:

- a) An **INTEGER** value reflecting the number of bytes of valid data sent, followed by
- b) The data.

This is done in clipboard **CF\_TEXT** format, so each block of data is terminated with a **CR**, a **LF** and a **NULL**.

The function returns **TRUE** if successful, or **FALSE** if not. Note that upon receipt of a **FALSE** return, **ClientReceivedPoke** will send a negative **DDE ACK** message back to TeemTalk to reflect the failure.

Sending data to TeemTalk requires the client to post a **WM\_DDE\_POKE** message, with a pointer to the data as defined previously (i.e. the first 2 bytes constitute a integer count of the number of bytes of data, followed by those bytes, and appended with **CR**, **LF**, **NULL**). A possible way of doing this is as follows.

*Note: This example does not contain any allowances for DDE messages that are awaiting ACKnowledgement from the partner, or provision of timeouts in the event of a DDE message not being ACKnowledged. iData and iValcount should be set to the same value, the reason for having these two parameters will become clear later on.*

```

SendPoke(
    HWND hwnd,           /* Our Window handle */
    HWND hWndPartnerDDE, /* handle for partner in DDE */
    char *szItem,       /* String ID for transfer */
    int iData,          /* Value to be transferred */
    char *szValue,      /* Data to be transferred */
    int iValCount       /* Number of bytes in transfer */
)

{
    ATOM        atomItem;
    HANDLE      hPokeData;
    DDEPOKE FAR * lpPokeData;
    LPSTR       pTemp;

    /* Allocate size of DDE data header, plus the data: a string */
    /* terminated by <CR> <LF> <NULL>. The <NULL> is counted by */
    /* by DDEPOKE.Value[1]. */

    if (!(hPokeData = GlobalAlloc(GMEM_MOVEABLE | GMEM_DDESHARE,
        (LONG)sizeof(DDEPOKE) + iValCount + sizeof(int) + 2)))
        return;

    if (!(lpPokeData = (DDEPOKE FAR*)GlobalLock(hPokeData)))
        return;

    lpPokeData->fRelease = TRUE;
    lpPokeData->cfFormat = CF_TEXT;

    pTemp = lpPokeData-> Value;
    *(int far *)pTemp = iData;
    pTemp += sizeof(int);

    if (iValCount)
        _fmemcpy(pTemp, szValue, iValCount);

    /* each line of CF_TEXT data is terminated by CR/LF */
    lstrcpy((LPSTR)(pTemp + iValCount), (LPSTR)"\r\n");
    GlobalUnlock(hPokeData);
    atomItem = GlobalAddAtom((LPSTR)szItem);

    if (!PostMessage(
        hWndPartnerDDE,
        WM_DDE_POKE,
        hwnd,
        MAKELONG(hPokeData, atomItem))
    )
    {
        GlobalDeleteAtom(atomItem);
        GlobalFree(hPokeData);
    }

    return;
}

```

## Reading & Setting Terminal Parameters

The TeemTalk for Windows 3.1 slave mode, or TeemTalk for Windows 95 or NT session DDE topic, supports the ability to set and read the user definable setup settings. The majority of settings require an integer value, but some require strings, which are handled slightly differently. The following sample code gives an outline of how to implement this. All values to identify the changeable setup parameters are #defines.

Settings that refer to strings will return a GLOBAL\_ATOM value which, when converted using the Windows SDK function **GlobalGetAtomName** will result in the appropriate string. It is essential that, once converted to a string, the Atom is deleted via a call to **DeleteAtom** in order to free up the resources, allocated by Windows, that are associated with the atom.

## Reading Parameter Settings

The following three examples assume that **hWnd**, the handle to the current window's DDE message processing routine and **hWndPartner**, the handle to the DDE partner, are set up accordingly.

### Example 1

Get the serial communication's port speed.

```
GetBaudRate()
{
    int iBaud;

    if ((BaudID = GetSetting(hWnd, hWndPartner, IDM_HOST,
                             BAUDGROUP, 0)) == -1)
        return -1;

    switch(BaudID)
    {
    case B110:
        iBaud = 110;
        break;
    case B300:
        iBaud = 300;
        break;
    case B600:
        iBaud = 600;
        break;
    case B1200:
        iBaud = 1200;
        break;
    }
```

```
case B2400:
    iBaud = 2400;
    break;
case B4800:
    iBaud = 4800;
    break;
case B9600:
    iBaud = 9600;
    break;
case B19200:
    iBaud = 19200;
    break;
    }
return iBaud
}
```

## **Example 2**

Read the currently defined Answerback string and place in given buffer.

```
GetAnswerback(LPSTR szAnswer, int iAnsLen)
{
    ATOM aAnswer;
    int iStrLen;

    aAnswer = (ATOM)GetSetting(hWnd, hWndPartner, IDM_EMUL,
                                ANSSTRING, 0);

    if (aAnswer == -1)
        return -1;

    iStrLen = GlobalGetAtomName(aAnswer, szAnswer, iAnsLen);
    GlobalDeleteAtom(aAnswer);

    return iStrLen;
}
```

### Example 3

All key values are defined using key macro identifiers as documented in the *Key Reference Numbers* appendix.

Read the keyboard macro assigned to the **Shift + F6** key sequence.

*Note: The highlighted characters **Slave** in `hWndSlaveDDE` are only applicable to TeemTalk for Windows 3.1. They are not to be included when using Windows 95 or NT.*

```
.
.
char buf(128);
ReadKbdMacro(141, (LPSTR)buf, 127);
.
.
ReadKbdMacro(
    int iKeyMacro,      /* Key to be redefined */
    LPSTR szKbdMacro,  /* Pointer to redefinition string */
    int iMacroLen      /* Max allowed Length of
                                szMacroString */
)
{
    ATOM aMacro;
    int iStrLen;
    aMacro = (ATOM)GetSetting(
        hWnd,
        hWndPartner,
        IDM_MACROS,
        NKEYSTRING,
        iKeyIndex
    );

    if (aMacro == -1)
        return - 1;

        /* Convert received Atom to string */
    iStrLen = GlobalGetAtomName(aMacro, szKbdMacro, iMacroLen);
    GlobalDeleteAtom(aMacro);

    return iStrLen;
}

GetSetting(HWND hWndSlaveDDE, HWND hWndPartner, int MenuID, int
DataGroup, int iValue)
{
    DWORD lSetting;
    ATOM aItem;
    char buf[16];
    int data;
```

```
        /* Treat Key macro request as a special case */
if (MenuID == IDM_MACROS)
    lSetting = MAKELONG(-DataGroup, iValue);

else
    lSetting = MAKELONG(DataGroup, MenuID);

ultoa(lSetting, buf, 10);

aItem = GlobalAddAtom((LPSTR)buf);

if (!PostMessage(
        hWndPartnerDDE,
        WM_DDE_REQUEST,
        hWndSlaveDDE,
        MAKELONG(CF_TEXT, aItem)
    )
)
    {
        GlobalDeleteAtom(atomItem);
        return -1;
    }
    /* Wait for DDE_DATA message return with requested data */
Xfer.Parameter = TRUE;
WaitForParameter();

return Xfer.Data;
}
```

The **WaitForParameter** function is not documented but basically waits in a loop, monitoring the windows messages until a **WM\_DDE\_DATA** message appears that corresponds to the initial **WM\_DDE\_REQUEST**. This then enables the **RequestSetting** procedure to return with the appropriate value, or will return **-1** if the request fails. (This would be caused as a result of the Client Slave process receiving a negative **ACKnowledgement** from TeemTalk following receipt of the **WM\_DDE\_REQUEST** message.)

The processing of the **WM\_DDE\_DATA** message is shown on the next page.

```

/*****
FUNCTION: ClientReceivedData
PURPOSE: Called upon receipt of a WM_DDE_DATA
*****/
void
ClientReceivedData(HWND hWndDDE, HWND hWndPartnerDDE, LONG
IParam)
{
    DDEDATA FAR * lpDDEData;
    BOOL bRelease;
    char szItemName(ITEM_NAME_MAX_SIZE+1);
        /*If this Data is in response to a request for data */
        /*clear awaiting flags etc accordingly */
    if (GetConvPendingAck(hWndDDE) == REQUEST)
    {
        SetConvPendingAck(hWndDDE, NONE);
        KillTimer(hWndDDE, hWndPartnerDDE);
    }
    if (!(lpDDEData = (DDEDATA FAR *)GlobalLock(LOWORD(IParam)))
        | | (lpDDEData->cfFormat != CF_TEXT))
    {
        /* Negative ACK */
        PostMessage(hWndPartnerDDE,
                    WM_DDE_ACK,
                    hWndDDE,
                    MAKELONG(0, HIWORD(IParam)))
        );
    }
    GlobalGetAtomName(HIWORD(IParam), szItemName,
ITEM_NAME_MAX_SIZE);

    Xfer.Data = *(int far *) (IpDDEData->Value);
    Xfer.Parameter = FALSE; /* Clear flag for wait for
                             parameter to return */
    if (IpDDEData->fAckReq)
        PostMessage(hWndPartnerDDE,
                    WM_DDE_ACK,
                    hWndDDE,
                    MAKELONG(0x8000, HIWORD(IParam)))
        );
    bRelease = IpDDEData->fRelease;
    GlobalUnlock(LOWORD(IParam));

    if (bRelease)
        GlobalFree(LOWORD(IParam));

    return;
}

```

## Changing Parameter Settings

### Example 1

Set the serial communication's port speed to a required baud rate.

```
GetBaudRate(int Baud)
{
    int BaudID;

    switch(iBaud)
    {
    case 110:
        BaudID = B110;
        break;
    case 300:
        BaudID = B300;
        break;
    case 600:
        BaudID = B600;
        break;
    case 1200:
        BaudID = B1200;
        break;
    case 2400:
        BaudID = B2400;
        break;
    case 4800:
        BaudID = B4800;
        break;
    case 9600:
        BaudID = B9600;
        break;
    case 19200:
        BaudID = B19200;
        break;
    default:
        return -1;
    }

    return ChangeSetting(hWnd, hWndPartner, IDM_HOST,
                        BAUDGROUP, BaudID, NULL, 0);
}
```

## Example 2

Redefine the Answerback to the given string.

```
SetAnswerback(LPSTR szAnswer, int iAnsLen)
{
    ChangeSetting(
        hWnd,
        hWndPartner,
        IDM_EMUL,
        ANSSTRING,
        iAnsLen,
        szAnswer,
        iAnsLen
    );
}
```

## Example 3

Set the keyboard macro assigned to the **Shift + F6** key sequence to Hello World.

*Note: The highlighted characters **Slave** in hWnd**Slave**DDE are only applicable to TeemTalk for Windows 3.1. They are not to be included when using Windows 95 or NT.*

```
.
.
SetKbdMacro(141, "Hello World", 11);
.
.
SetKbdMacro(
    int iKeyMacro, /* Key to be redefined */
    LPSTR szMacroString, /* Pointer to redefinition string */
    int iMacroLen /* Max allowed Length of szMacroString */
)
{
    ChangeSetting(
        hWnd,
        hWndPartner,
        IDM_MACROS,
        NKEYSTRING,
        iKeyIndex,
        szMacroString,
        iMacroLen
    );
}
void
```

```
ChangeSetting(  
    HWND hWndSlaveDDE,  
    HWND hWndPartnerDDE,  
    int MenuID,  
    int DataGroup,  
    int iValue,  
    LPSTR szChar,  
    int iCharCount  
)  
{  
    DWORD lSetting;  
    char buf[16];  
  
    lSetting = MAKELONG(DataGroup, MenuID);  
    ltoa(iSetting, buf, 10);  
  
    SendPoke(hWndSlaveDDE, hWndPartnerDDE, buf, iValue, szChar,  
            iCharCount);  
}
```

This time, the call to **SendPoke** assumes that all used strings are **NULL** terminated therefore allowing the **iValue** parameter to reference an integer setting, as opposed to the byte count as done previously. This is done to allow keyboard macros to be wholly defined whilst at the same time limiting the number of functions required to implement the Slave link.

## Terminating The Slave DDE Link

To terminate the link requires a **WM\_DDE\_TERMINATE** message to be sent to TeemTalk.

```
TerminateSlaveLink()  
{  
    PostMessage(hWndPartner, WM_DDE_TERMINATE, hWnd, 0L);  
}
```

Once received and actioned, TeemTalk will return to its normal state.

It is worth noting that any settings changed whilst in Slave mode will still apply. It is therefore important that any parameters changed during the life of the slave link be reset back to the values that were set prior to entry. This is best done by ensuring that for every **ChangeParameter** call, a corresponding **GetParameter** call is made beforehand.

## Additional DDE Functions

| TOPIC   | ITEM         | DATA  | DDE MESSAGE    | RESULT  |
|---------|--------------|---|----------------|---|
| System  | Sysltems     | NONE  | REQUEST        | Provides a list of items, in CF_TEXT format, that can be used with the SYSTEM DDE Topic (i.e. "Sysltems", "Topics", etc.).        |
| System  | Topics       | NONE  | REQUEST        | Provides a list of items, in CF_TEXT format, of the DDE topics supported by <i>teemtalk</i> (i.e. "System", "Session", etc.).     |
| System  | Formats      | NONE  | REQUEST        | Provides a list of items, in CF_TEXT format, of the Clipboard formats supported by <i>teemtalk</i> (i.e. "TEXT", "BITMAP", etc.). |
| System  | Status       | NONE  | REQUEST        | Returns with a string relating to the current condition of <i>teemtalk</i> (i.e. Online/Local).                                   |
| System  | SendMouse    | X, Y coordinates & button pressed.                    | POKE           | Sends coordinates of a mouse click to a remote application (i.e. host).   |
|         | SendMouseStr | X, Y coordinates & button pressed.                    | POKE           | Sends coordinates of a mouse click to a remote application (i.e. host) as a character string.                                     |
| Session | Send         | String of data to be sent to host/remote application. | POKE           | Sends the given string of characters to the host.   |
| Session | Receive      | String of data received from the host.                | REQUEST ADVISE | Receive a character string from the host. Delimited by CR/LF (by default).  |
| Session | Escape       | String of commands for <i>teemtalk</i> to execute.    | EXECUTE        | Data gets interpreted by <i>teemtalk</i> directly and is acted upon accordingly.  |
| Session | CurPos       | NONE  | REQUEST        | Returns coordinates of current cursor position to calling application.  |
| Session | CurPosStr    | NONE  | REQUEST        | Returns coordinates of current cursor position to calling application in a string.  |
| Session | KeyStr       | String containing virtual key name.                   | POKE           | String of characters, in CF_TEXT format, that forms command.  |
| Session | KeyPress     | String containing macro definition.                   | POKE           | String of characters, in CF_TEXT format, that forms command.  |

The first four functions in the table enable interrogation of TeemTalk. The remaining functions are described in the following sections.

All functions referenced with the "Session" topic can additionally be performed using a topic name relating to the relevant TeemTalk instance, i.e. **TTLK1**, **TTLK2**, etc. as discussed in the section *Using The Edit Menu DDE Functions* earlier.

If a TeemTalk session has been created other than **Untitled**, then that session name can be used as the current session topic by an application conversing with TeemTalk. Note that changing the session name will remove the link to the session.

## SendMouse & SendMouseStr

**SendMouse** is used to send the coordinates of a mouse click to a remote application (i.e. host).

The data structure passed across a DDE link between two co-operating applications is defined in the **DDE.H** file (supplied as part of the Windows SDK) as follows:

```
typedef struct tagDDEPOKE
{
    WORD    unused:13, /* Earlier versions of DDE.H incorrectly */
           /* 12 unused bits. */
           fRelease:1,
           fReserved:2,
    short   cfFormat;
    BYTE    Value[1]; /* This member was named rgb[1] in */
           /* previous versions of DDE.H */
} DDEPOKE;
```

In order to supply the three values expected by TeemTalk, we have defined a **DDE\_MOUSE\_REPORT** structure as follows:

```
typedef struct DDE_MOUSE_REPORT
{
    int X;
    int Y;
    int ButtonID;
} DDEMOUSEREPORT, FAR *LPDDEMOUSERPORT;
```

This needs to be integrated with the **DDEPOKE** structure when allocating the memory required to transfer this data to TeemTalk. One way of doing this is shown below.

```
/* Allocate size of DDE data header, plus the mouse hit data: */
/* terminated by <CR> <LF> <NULL>. The <NULL> is counted */
/* by DDEPOKE.Value[1] */

if (!(hPokeData
    = GlobalAlloc(GMEM_MOVEABLE | GMEM_DDESHARE,
```

```
(LONG)sizeof(DDEPOKE) + sizeof(DDEMOUSEREPORT) + 2)))
    return;
if (!(lpPokeData = (DDEPOKE FAR*)GlobalLock(hPokeData))
    {
    GlobalFree(hPokeData);
    return;
    }
MouseReport.X = Coord.x;
MouseReport.Y = Coord.y;
MouseReport.ButtonID = ButtonDown;

memcpy(lpPokeData->Value, &(BYTE far *)MouseReport,
        sizeof(DDEMOUSEREPORT));
```

There is no limit checking on the values of X and Y, so the values passed through to TeemTalk **must** be within the valid range for the application that is to receive the mouse hit. Valid values for the button press (ButtonID) are shown below. Any values out of this range will result in the **DDE\_POKE** failing.

- 0 Left Mouse Button
- 1 Centre Mouse Button
- 2 Right Mouse Button

It is important to note that the host application receiving these "mouse hit reports" must be able to recognize them. The reports will be sent in a format appropriate to TeemTalk's current mode of operation. For example, when TeemTalk-07W is in W3220 mode the reports would be in Westward 3220 format, whilst in Tek mode the reports would be in Tek format.

The **SendMouseStr** function is an alternative string version of **SendMouse**. The information sent with the data message is a string of decimal values in the form **x,y,n** where **n** indicates the mouse button as listed earlier.

## Send

**Send** is a straightforward **POKE** of data, which must be terminated with a **CRLF** **NULL** sequence, to keep in line with the **CF\_TEXT** data format. Note however that these three characters will not get dispatched through to the host.

## Receive

**Receive** is a WARM/HOT link function (via the **WM\_DDE\_ADVISE** and subsequent **WM\_DDE\_DATA** messages).

All data received by TeemTalk once reception of the **WM\_DDE\_ADVISE** message has been acknowledged will be acted upon as normal, but with one important addition. The data will also be buffered until the specified termination character(s) is/

are received and then all of the buffered data will be dispatched to the Client DDE application that established the link.

The termination characters are **CR LF** by default, but this can be overridden by including the following **WIN.INI** command in the TeemTalk command group:

**SessRecvTerm=character(s)**

where *character(s)* can be **CRLF** (default), **CR**, or **LF**.

The link is terminated upon receipt of an appropriate **WM\_DDE\_UNADVISE** message by TeemTalk.

## Escape

The **Escape** function sends the given string which is interpreted by TeemTalk, and nothing is dispatched to the host. This provides the ability for an application to directly dispatch (for example) Tektronix 4207 specific escape sequences to TeemTalk-07W, and have it act upon them appropriately. Note that this is specified to accept strings of data, which means that NULL characters cannot be dispatched as they are interpreted to terminate the string. The entire Execute string must be in the form:

**[Escape(String to send)]**

An appropriate way for an application to do this is to make use of the Windows SDK **lstrcpy** function. For example, to force TeemTalk to display red characters on a white background, the following would be specified:

```
lstrcpy(lpszEscString, "[Escape(\e[31;47m)]");
```

The **lpszEscString** would then be attached to the standard DDEEXECUTE data structure and be transmitted by posting it along with a **WM\_DDE\_EXECUTE** message.

## CurPos & CurPosStr

**Curpos** uses a **DDE\_DATA** command to pass back data for the requested cursor position. The data is held in the structure **DDE\_CURS\_INF**, as documented below, and sent across to the calling program in **CF\_TEXT** format.

```
typedef struct DDE_CURS_INF
{
    int Column;
    int Row;
}DDE_CURSINF, FAR * LPDDE_CURSINF;
```

This needs to be extracted from the **DDEDATA** message in order to read the appropriate values. One way of doing this is shown below.

```
 /
*****
FUNCTION: ClientReceiveData
PURPOSE: Called when client application receives WM_DDE_DATA message.
***** /
void
ClientReceiveData(HWNDClientDDE, HWNDServerDDE, LPARAM)
HWND HWNDClientDDE;
HWND HWNDServerDDE;
LONG LPARAM;
{
DDEDATA FAR * lpDDEData;
LPDDE_CURSINF lpDdeCursInf;
BOOL bRelease;
BOOL bAck;

if (!(lpDDEData = (DDEDATA FAR *)GlobalLock(LOWORD(PARAM))) ||
    (lpDDEData->cfFormat != CF_TEXT))
{
PostMessage(HWNDServerDDE,
WM_DDE_ACK, HWNDClientDDE,
MAKELONG(0, HIWORD(PARAM))); /* Negative ACK */
}
else
{
/* Read Row/Column values in static vars */
lpDdeCursInf = (LPDDE_CURSINF)lpDDEData->Value;
CurrentCursRow = lpDdeCursInf->Row;
CurrentCursCol = lpDdeCursInf->Col;

if (lpDDEData->fAckReq)
{ /* return ACK or NACK */
PostMessage(HWNDServerDDE,
WM_DDE_ACK,
HWNDClientDDE,
MAKELONG( (bAck? 0x8000:0),
HIWORD(PARAM)));
}
bRelease = lpDDEData->fRelease;
GlobalUnlock(LOWORD(PARAM));
if (bRelease)
GlobalFree(LOWORD(PARAM));
}
return;
}
}
```

The **CurPosStr** function is an alternative string version of **CurPos**. This returns a string of two three-digit decimal values for the X and Y coordinates in the form **xxx,yyy**.

## KeyStr

**KeyStr** is a straightforward **POKE** of data that is treated as a key macro to be performed.

More than one macro definition can be specified in the same string. The string example below will perform the function of the keys **Alt + F4** pressed together followed by the **A** key:

```
"<ALT+F4><A>"
```

**KeyStr** must be terminated with a **CR LF NULL** sequence to keep in line with the **CF\_TEXT** data format. Note however that these three characters will not get dispatched through to the host.

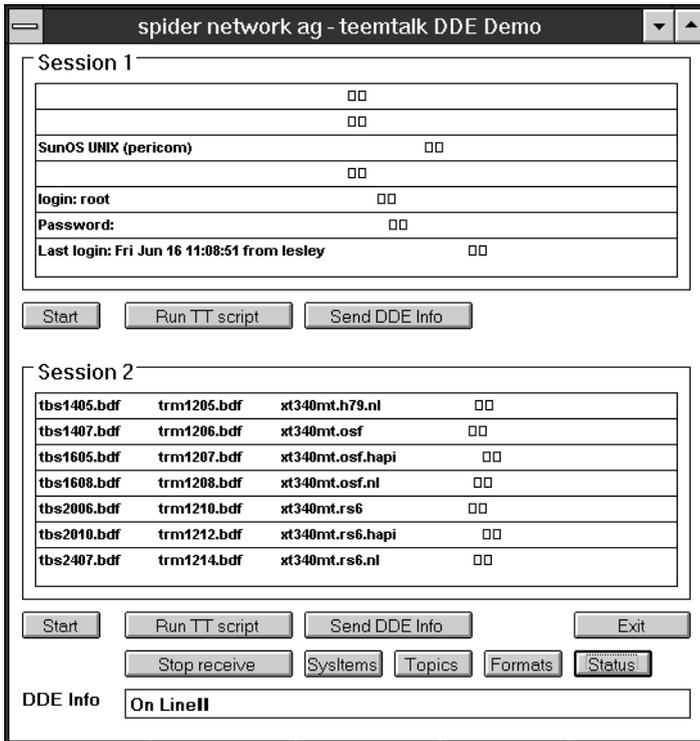
## KeyPress

**KeyPress** is a straightforward **POKE** of data that will cause the function of a key to be performed as if it had been pressed by an operator. The data is a string containing the virtual key name of the required key. Refer to the *Virtual Key Names* appendix for a list of key names that can be used.

This must be terminated with a **CR LF NULL** sequence to keep in line with the **CF\_TEXT** data format. Note however that these three characters will not get dispatched through to the host.

## DDE Link To A Visual Basic Application

The following example Visual Basic application **DDEDEMO** creates a DDE link to two copies of TeemTalk. The link is created when the **Start** button is clicked. System information can be gained by using the buttons at the bottom of the screen. You can send information to TeemTalk by entering text in the box and clicking the **Send** button. Various items are hardcoded into this, like the name of the TeemTalk executable and the name of the script file.



*Note: To make an executable file from Visual Basic, select **Make EXE File...** in the **File** menu and enter a suitable file name.*

# DDEDEMO

VERSION 2.00

Begin Form Form1

```
Caption           = "spider network ag - TeemTalk DDE Demo "  
ClientHeight     = 6408  
ClientLeft       = 1992  
ClientTop        = 900  
ClientWidth      = 6516  
Height           = 6828  
Left             = 1944  
LinkTopic        = "Form1"  
ScaleHeight      = 6408  
ScaleWidth       = 6516  
Top              = 528  
Width            = 6612
```

Begin CommandButton cls

```
Caption           = "Send DDE Info"  
FontBold          = 0   'False  
FontItalic        = 0   'False  
FontName          = "MS Sans Serif"  
FontSize          = 7.8  
FontStrikethru    = 0   'False  
FontUnderline     = 0   'False  
Height           = 255  
Index             = 0  
Left              = 2760  
TabIndex          = 29  
Top               = 2400  
Width             = 1575
```

End

Begin CommandButton ttscr

```
Caption           = "Run TT script"  
FontBold          = 0   'False  
FontItalic        = 0   'False  
FontName          = "MS Sans Serif"  
FontSize          = 7.8  
FontStrikethru    = 0   'False  
FontUnderline     = 0   'False  
Height           = 255  
Index             = 1  
Left              = 1080  
TabIndex          = 28  
Top               = 5280  
Width             = 1575
```

End

Begin CommandButton TTstat

```
Caption           = "Start"  
FontBold          = 0   'False  
FontItalic        = 0   'False  
FontName          = "MS Sans Serif"
```

```
FontSize      = 7.8
FontStrikethru = 0  'False
FontUnderline = 0  'False
Height        = 255
Index         = 0
Left          = 120
TabIndex      = 27
Top           = 2400
Width         = 735
```

End

**Begin TextBox Text1**

```
FontBold      = -1  'True
FontItalic    = 0   'False
FontName      = "Arial"
FontSize      = 7.2
FontStrikethru = 0  'False
FontUnderline = 0  'False
Height        = 375
Index         = 18
Left          = 240
TabIndex      = 15
Top           = 4680
Width         = 6015
```

**End**

*repeat last section with the following changes:*

```
Index      17 16 15 14 13 12 11 5  4 3  2 1 0
TabIndex   14 13 12 11 10 9  8 7  6 5  4 3 1
Top        4440 4200 3960 3720 3480 3240 1800
           1560 1320 1080 840  600  360
```

Begin CommandButton receive

```
Caption      = "Receive"
FontBold     = 0   'False
FontItalic   = 0   'False
FontName     = "MS Sans Serif"
FontSize     = 7.8
FontStrikethru = 0  'False
FontUnderline = 0  'False
Height       = 255
Index        = 0
Left         = 1080
TabIndex     = 25
Top          = 5640
Width        = 1575
```

End

Begin CommandButton status

```
Caption      = "Status"
FontBold     = 0   'False
FontItalic   = 0   'False
FontName     = "MS Sans Serif"
```

```
FontSize      = 7.8
FontStrikethru = 0  'False
FontUnderline = 0  'False
Height       = 255
Index       = 4
Left        = 5280
TabIndex   = 24
Top         = 5640
Width      = 735
End
Begin CommandButton formats
Caption     = "Formats"
FontBold   = 0  'False
FontItalic = 0  'False
FontName   = "MS Sans Serif"
FontSize   = 7.8
FontStrikethru = 0  'False
FontUnderline = 0  'False
Height     = 255
Index     = 2
Left      = 4440
TabIndex  = 23
Top       = 5640
Width    = 735
End
Begin CommandButton topics
Caption     = "Topics"
FontBold   = 0  'False
FontItalic = 0  'False
FontName   = "MS Sans Serif"
FontSize   = 7.8
FontStrikethru = 0  'False
FontUnderline = 0  'False
Height     = 255
Index     = 1
Left      = 3600
TabIndex  = 22
Top       = 5640
Width    = 735
End
Begin CommandButton SysItems
Caption     = "SysItems"
FontBold   = 0  'False
FontItalic = 0  'False
FontName   = "MS Sans Serif"
FontSize   = 7.8
FontStrikethru = 0  'False
FontUnderline = 0  'False
Height     = 255
Index     = 0
Left      = 2760
TabIndex  = 21
```

```
        Top           = 5640
        Width         = 735
    End
    Begin TextBox Text2
        Height        = 285
        Left          = 1080
        TabIndex      = 20
        Top           = 6000
        Width         = 5295
    End
    Begin CommandButton cls
        Caption       = "Send DDE Info"
        FontBold      = 0 'False
        FontItalic    = 0 'False
        FontName      = "MS Sans Serif"
        FontSize      = 7.8
        FontStrikethru = 0 'False
        FontUnderline = 0 'False
        Height        = 255
        Index         = 4
        Left          = 2760
        TabIndex      = 18
        Top           = 5280
        Width         = 1575
    End
    Begin CommandButton ttscr
        Caption       = "Run TT script"
        FontBold      = 0 'False
        FontItalic    = 0 'False
        FontName      = "MS Sans Serif"
        FontSize      = 7.8
        FontStrikethru = 0 'False
        FontUnderline = 0 'False
        Height        = 255
        Index         = 0
        Left          = 1080
        TabIndex      = 17
        Top           = 2400
        Width         = 1575
    End
    Begin CommandButton Exit
        Caption       = "Exit"
        FontBold      = 0 'False
        FontItalic    = 0 'False
        FontName      = "MS Sans Serif"
        FontSize      = 7.8
        FontStrikethru = 0 'False
        FontUnderline = 0 'False
        Height        = 255
        Index         = 0
        Left          = 5280
        TabIndex      = 16
```

```
        Top           = 5280
        Width         = 1095
    End
    Begin CommandButton TTstat
        Caption       = "Start"
        FontBold      = 0 'False
        FontItalic    = 0 'False
        FontName      = "MS Sans Serif"
        FontSize      = 7.8
        FontStrikethru = 0 'False
        FontUnderline = 0 'False
        Height        = 255
        Index         = 1
        Left          = 120
        TabIndex      = 0
        Top           = 5280
        Width         = 735
    End
    Begin Frame Rahmen1
        Caption       = "Session 1"
        FontBold      = -1 'True
        FontItalic    = 0 'False
        FontName      = "System"
        FontSize      = 9.6
        FontStrikethru = 0 'False
        FontUnderline = 0 'False
        Height        = 2295
        Left          = 120
        TabIndex      = 2
        Top           = 0
        Width         = 6255
    End
    Begin Frame Rahmen2
        Caption       = "Session 2"
        FontBold      = -1 'True
        FontItalic    = 0 'False
        FontName      = "System"
        FontSize      = 9.6
        FontStrikethru = 0 'False
        FontUnderline = 0 'False
        Height        = 2295
        Left          = 120
        TabIndex      = 26
        Top           = 2880
        Width         = 6255
    End
    Begin Label Bezeichnung1
        Caption       = "DDE Info"
        Height        = 255
        Left          = 120
        TabIndex      = 19
        Top           = 6000
```

```
        Width          = 975
    End
End

Sub cls_Click (index As Integer)
    text2.LinkMode = 0
    If index = 0 Then
        text2.LinkTopic = "TT07W|ttlk1"
    Else
        text2.LinkTopic = "TT07W|ttlk2"
    End If

    text2.LinkItem = "Send"
    text2.LinkMode = 2
    text2 = text2 + Chr(13) + Chr(10) + Chr(0)
    text2.LinkPoke
    text2 = Chr(13)
    text2.LinkPoke
    text2 = ""
End Sub

Sub Exit_Click (index As Integer)
    End
End Sub

Sub formats_Click (index As Integer)
    text2.LinkMode = 0
    text2.LinkTopic = "TT07W|System"
    text2.LinkItem = "Formats"
    text2.LinkMode = 2
    text2.LinkRequest
End Sub

Sub ftp_Click (index As Integer)
    text2.LinkMode = 0
    text2.LinkTopic = "TTfler|System"
    text2.LinkItem = "SysItems"
    text2.LinkMode = 2
    text2.LinkRequest
End Sub

Sub receive_Click (index As Integer)
    If receive(0).Caption = "Receive" Then
        receive(0).Caption = "Stop receive"
        text2.LinkMode = 0
        text2.LinkTopic = "TT07W|Session"
        text2.LinkItem = "Receive"
        text2.LinkMode = 1
    Else
        receive(0).Caption = "Receive"
        text2.LinkMode = 0
    End If
End Sub
```

```
End Sub

Sub status_Click (index As Integer)
    text2.LinkMode = 0
    text2.LinkTopic = "TT07W\System"
    text2.LinkItem = "Status"
    text2.LinkMode = 2
    text2.LinkRequest
End Sub

Sub Sysitems_Click (index As Integer)
    text2.LinkMode = 0
    text2.LinkTopic = "TT07W\System"
    text2.LinkItem = "SysItems"
    text2.LinkMode = 2
    text2.LinkRequest
End Sub

Sub topics_Click (index As Integer)
    text2.LinkMode = 0
    text2.LinkTopic = "TT07W\System"
    text2.LinkItem = "Topics"
    text2.LinkMode = 2
    text2.LinkRequest
End Sub

Sub ttscr_Click (index As Integer)
    text2.LinkMode = 0
    If index = 0 Then
        text2.LinkTopic = "TT07W|ttlk1"
    Else
        text2.LinkTopic = "TT07W|ttlk2"
    End If
    text2.LinkItem = "Escape"
    text2.LinkMode = 2
    text2.LinkExecute "[Escape(" + Chr(27) +
    "P2zC:\TTLKW31\scripts\DEMO.SCR(WIN,INIT)" + Chr(27) + "\)]"
End Sub

Sub TTstat_Click (index As Integer)
    If index = 0 Then
        For i = 0 To 6
            Text1(i).LinkMode = 0
            Text1(i).LinkTopic = "TT07W|ttlk1"
            Text1(i).LinkItem = "0," + i + ",80"
            Text1(i).LinkMode = 1
        Next i
    Else
        For i = 0 To 6
            Text1(i + 12).LinkMode = 0
            Text1(i + 12).LinkTopic = "TT07W|ttlk2"
```

```
    Text1(i + 12).LinkItem = "0," + i + ",80"  
    Text1(i + 12).LinkMode = 1  
Next i  
End If  
End Sub
```

# A

## Troubleshooting

---

**This appendix provides answers to the most commonly asked questions.**

**Problem:** When I try to run TeemTalk a message appears warning me that the language DLL or file transfer utility may not be compatible.

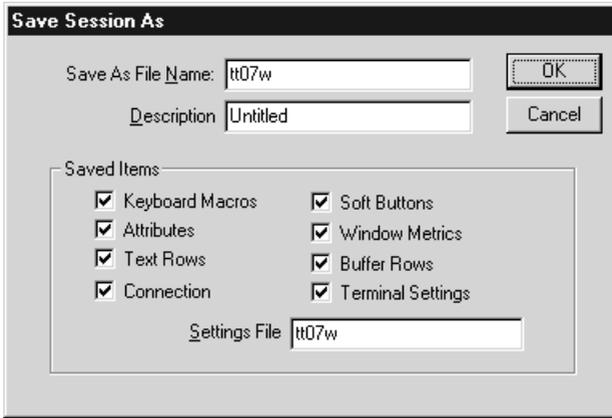
**Solution:** This may occur when you have more than one version of TeemTalk installed on your system and the version you are trying to run is attempting to use a DLL or file that belongs to another version. If you continue you may get unpredictable results.

**Problem:** Every time I run my application I have to change my setup parameters.

**Solution:** You can save the current session configuration as a connection template. To make TeemTalk automatically attempt to make a host connection using the same settings the next time it is loaded, click the **File** option in the menu bar to display the **File** menu, then click the **Save Session** option.

TeemTalk enables you to create multiple connection templates, any one of which can be used either when TeemTalk is loaded or while it is running. The procedure is as follows:

1. In the **File** menu, select the **Save Session As...** option to display the dialog box shown overleaf.
2. In the **Saved Items** box, indicate which user preference settings are to be saved by checking the boxes next to the relevant options.
3. In the **Settings File** text box, specify the name of the terminal emulation settings file (and the directory path if different from the default) which is to store settings only affecting the terminal emulation. The default filename is **tt\*w.nv**, where **\*** is **05**, **07** or **11**, depending on your version of TeemTalk.



4. In the **Save As File Name** text box, specify the name of the workspace settings file (and the directory path if different from the default) which is to store the user preference settings selected by the **Saved Items** options. The default filename is **tt\*w.wsp**, where \* is **05**, **07** or **11**, depending on your version of TeemTalk.

*Note: Splitting the saved settings into two files enables users to share a common terminal emulation settings file while allowing each user to have their own workspace settings file.*

5. In the **Description** text box, enter a unique description (up to 132 characters long) which will be used to identify the connection template for future selection. This description will also appear in the **Open Session** dialog box.
6. Click the **OK** button to save the connection template. If you specified the names of settings files that already exist, a message box will ask you to confirm whether or not you want to overwrite the existing files with the new settings.

**Problem:** **Random characters appear on the screen when running my application.**

**Solution:** Check that the terminal emulation mode selected in the **Emulation Settings** dialog box is set to the correct one for the application. TeemTalk defaults to the **VT100** emulation.

Check that the settings in the **Serial Settings** dialog box match that of the host.

**Problem:** How do I run a 4010 program?.

**Solution:** Display the **Emulation Settings** dialog box and select **Tek** as the emulation, then display the **Dialog Settings** dialog box and set the **Dialog Area Enabled** option to **0** (zero).

**Problem:** The text background colour is incorrect.

**Solution:** Select the required text colour indices in the **Attributes** dialog box then display the **Dialog Settings** dialog box and select **Dialog Indices Locked**.

**Problem:** The Gin cursor is too small.

**Solution:** TeemTalk displays a small crosshair cursor by default. You can change the size of the cursor by using the following initialization file command or command line option:

Initialization file command: **CrosshairSize=1-4096**

Command line option: **-x1-4096**

**Problem:** The position of text is incorrect and/or the wrong line is displayed when scrolling through the text.

**Solution:** Try changing the setting of the **Cursor Origin** option in the **Dialog Settings** dialog box.

**Problem:** Characters are being lost over serial interfaces.

**Solution:** The problem is a result of a data overrun in the serial I/O controller on the communications board of the PC. As characters are received from the outside world, the serial I/O controller stores characters received over the RS232 and then generates an interrupt to DOS to signify the arrival of a character. DOS, and subsequently Windows then read this character and pass it to the interested application. The problem comes if characters are received faster than they can be processed by the PC.

Most serial controllers use a buffering technique which stores multiple characters during times of peak loading so that the affect is minimised. Because Windows and other applications disable processing of interrupts for considerable periods of time, this buffering is not always sufficient to overcome the problem. Below are some suggestions to minimize the problem.

1. Edit the **CONFIG.SYS** file so that the stacks statement (if one exists) reads **STACKS=0,0**. If this isn't done, DOS will turn interrupts off for a short period when there is a hardware interrupt.

2. Some overruns are caused by **SMARTDRV** write caching. To disable write caching but continue read caching, specify the drive letter without a + or -. For example, **SMARTDRV C** enables read caching but disables write caching. Note, however, that this will slow the PC down.
3. Remove the **DOS=HIGH** statement from **CONFIG.SYS** as it causes interrupts to be delayed longer. Note that this will take up precious **CONVENTIONAL** memory space.
4. An ill-behaved TSR may be contributing to the problem. If so, try to isolate it by removing all TSRs then adding them back one at a time.
5. Run in standard mode. Windows stops virtualizing I/O and there is less overhead.
6. Remove the **SOUNDS.DRV** driver (which enables a variety of sounds from your PC speaker) if it is present, as this disables interrupts while activated.

Other things you could try are listed below.

- Check that you are using the Windows versions of **EMM386**, **HIMEM.SYS** and **SMARTDRV**, and *not* the DOS versions.
- Don't run multiple disk-caching programs.
- In **CONFIG.SYS**, set **FILES** to **30** or higher.
- Check that you have **SHELL=COMMAND.COM / E:2048 / P** i.e. 2K environment.
- If Windows hangs, increase the stacks to **64,512**. The recommendation is 0,0.
- Check that your **TEMP** variable points to a subdirectory that actually exists and that there are at least 2 megabytes free on the disk.
- Check that **EMMExclude=A000-EFFF**, otherwise Windows will interfere with (DOS) high memory when it shouldn't.
- For bizarre problems, disable shadow RAM. If this rectifies the problem, upgrade your BIOS.
- Disable hardware cache in caching disk controller.
- If you are using V3.1 of Windows communication drivers then try using a serial port with a 16550 UART.

*Note: Microsoft has produced a document called **CE\_OVERRUN Errors with Serial Communications** which can be obtained by contacting Microsoft and asking for document number **Q79988**.*

# B

## Virtual Key Names

This appendix lists all the supported virtual key names which enable you to include a specific key function in a user definition.

### Standard Virtual Key Names

| Key Function         | Virtual Key Name | Key Function         | Virtual Key Name |
|----------------------|------------------|----------------------|------------------|
| 0 - 9                | VK_0 - VK_9      | Keypad Add (+)       | VK_ADD           |
| A - Z                | VK_A - VK_Z      | Keypad Divide (/)    | VK_DIVIDE        |
| Alt (same as Menu)   | VK_ALT           | Keypad Decimal (.)   | VK_DECIMAL       |
| Alt (right)          | VK_RALT          | Keypad Multiply (*)  | VK_MULTIPLY      |
| Apostrophe (' @)*    | VK_OEM_3         | Keypad Subtract (-)  | VK_SUBTRACT      |
| Back Slash (\  )*    | VK_OEM_5         | Menu (same as Alt)   | VK_MENU          |
| Backspace            | VK_BACK          | Minus (- _)          | VK_OEM_MINUS     |
| Break                | VK_BREAK         | Not Sign (~ ^)*      | VK_OEM_8         |
| Caps Lock            | VK_CAPITAL       | Number Sign (# ~)*   | VK_OEM_7         |
| Comma (, <)          | VK_OEM_COMMA     | Num Lock             | VK_NUMLOCK       |
| Comma                | VK_COMMA         | Less Than Sign (< >) | VK_OEM_102       |
| Compose Character    | VK_COMPOSE       | Page Down            | VK_NEXT          |
| Control (left)       | VK_CONTROL       | Page Up              | VK_PRIOR         |
| Control (right)      | VK_RCONTROL      | Paste                | VK_PASTE         |
| Copy                 | VK_COPY          | Pause                | VK_PAUSE         |
| Cursor Down          | VK_DOWN          | Period (, >)         | VK_OEM_PERIOD    |
| Cursor Left          | VK_LEFT          | Plus (+ =)           | VK_OEM_PLUS      |
| Cursor Right         | VK_RIGHT         | Print Screen         | VK_SNAPSHOT      |
| Cursor Up            | VK_UP            | Print Screen         | VK_PRINTSCREEN   |
| Data Talk            | VK_DATATALK      | Return               | VK_RETURN        |
| Delete               | VK_DELETE        | Scroll Lock          | VK_OEM_SCROLL    |
| End                  | VK_END           | Semicolon (; :)*     | VK_OEM_1         |
| Escape               | VK_ESCAPE        | Separator            | VK_SEPARATOR     |
| Euro Sign            | VK_EUROSIGN      | Setup                | VK_SETUP         |
| Exit <i>teemtalk</i> | VK_EXIT          | Shift                | VK_SHIFT         |
| F1 - F12             | VK_F1 - VK_F12   | Shift (right)        | VK_RSHIFT        |
| Forward Slash (/ ?)* | VK_OEM_2         | Spacebar             | VK_SPACE         |
| Hold Screen          | VK_HOLDSCREEN    | Square Bracket L*    | VK_OEM_4         |
| Home                 | VK_HOME          | Square Bracket R*    | VK_OEM_6         |
| Insert               | VK_INSERT        | Tab                  | VK_TAB           |
| Keypad 0 - 9         | VK_NUMPAD0 - 9   |                      |                  |

\* 102 key keyboard, may not appear on others

### 122 Key Keyboard Additional Keys

| Key Function | Virtual Key Name | Key Function | Virtual Key Name |
|--------------|------------------|--------------|------------------|
| Attn         | VK_ATT_N         | F19 - F24    | VK_OEM_F19 - F24 |
| Clear        | VK_OEM_CLEAR     | No Name      | VK_NONAME        |
| Cu Sel       | VK_CUSEL         | PA1          | VK_PA1           |
| Erase EOF    | VK_ERE0F         | Play         | VK_PLAY          |
| Ex Sel       | VK_EXSEL         | Reset        | VK_OEM_RESET     |
| F13 - F18    | VK_F13 - VK_F18  | Zoom         | VK_ZOOM          |

### DEC VT220 Virtual Key Names

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| Key Function | Virtual Key Name | Key Function   | Virtual Key Name |
|--------------|------------------|----------------|------------------|
| Back Tab     | VT_CSIZ          | Insert         | VT_INSERT        |
| Break        | VT_BREAK         | Keypad 0 - 9   | VT_PAD0 - 9      |
| Backspace    | VT_BACKSPACE     | Keypad Comma   | VT_COMMA         |
| Compose      | VT_COMPOSE       | Keypad Decimal | VT_PADDECIMAL    |
| Cursor Down  | VT_DOWN          | Keypad Minus   | VT_MINUS         |
| Cursor Left  | VT_LEFT          | Next Page      | VT_NEXT          |
| Cursor Right | VT_RIGHT         | PF1 - PF4      | VT_PF1 - VT_PF4  |
| Cursor Up    | VT_UP            | Previous Page  | VT_PREV          |
| Datataalk    | VT_DATATALK      | Print          | VT_PRINT         |
| Delete       | VT_DELETE        | Remove         | VT_REMOVE        |
| Do (F16)     | VT_DO            | Return         | VT_RETURN        |
| Enter        | VT_ENTER         | Scroll Down    | VT_PANDOWN       |
| Escape       | VT_ESCAPE        | Scroll Left    | VT_PANLEFT       |
| F6 - F14     | VT_F6 - VT_F14   | Scroll Right   | VT_PANRIGHT      |
| F17 - F20    | VT_F17 - VT_F20  | Scroll Up      | VT_PANUP         |
| Find         | VT_FIND          | Select         | VT_SELECT        |
| Help (F15)   | VT_HELP          | Setup          | VT_SETUP         |
| Hold Screen  | VT_HOLD          | Tab            | VT_TAB           |

### Tek Virtual Key Names

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| Key Function        | Virtual Key Name | Key Function  | Virtual Key Name |
|---------------------|------------------|---------------|------------------|
| Break               | TK_BREAK         | Primary Setup | TK_SETUP         |
| Cancel              | TK_CANCEL        | Print         | TK_PRINT         |
| Default View*       | TK_DEFVIEW       | Restore View* | TK_RSTVIEW       |
| Dialog Area Copy*   | TK_DCOPY         | Screen Copy   | TK_SCOPY         |
| D. Area Visibility* | TK_DVISIB        | View Down*    | TK_VIEWDOWN      |
| Erase Dialog Area   | TK_DERASE        | View Up*      | TK_VIEWUP        |
| Erase Graphics Area | TK_GERASE        | Zoom*         | TK_ZOOM          |
| Fill Patterns       | TK_PATTERNS      |               |                  |

\* Except TeemTalk-05W and TeemTalk-05W32.

# C

## ***Key Reference Numbers***

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**This appendix lists the reference numbers assigned to keys on the British keyboard and mouse buttons which are used by Tek key programming commands.**

The following tables of reference numbers correspond to the keys listed in the left column. The key legends shown are those found on the British versions of the keyboard layouts for the different systems compatible with TeemTalk. Note that not all of the function keys are on all of the keyboards.

The reference numbers for control keys on other national keyboards will be the same as shown for the British keyboard.

Alphabetic, numeric and symbolic key reference numbers for other national keyboards are the same as those for the keys in the *equivalent positions* on the British keyboard.

Comparison can be made as follows. To find alphabetic, numeric and symbolic key reference numbers for non-British keyboard layouts, refer to the keyboard layouts in the manual supplied by the manufacturer. Compare the key positions with those on the British layout in that manual, then find the corresponding reference numbers in the following tables.

## BRITISH KEYBOARD KEY REFERENCE NUMBERS

| KEY                 | NORM | SHIFT | CTRL | CT/SH | ALT  |
|---------------------|------|-------|------|-------|------|
| <b>COMPOSE</b>      | -166 | -166  | -166 | -166  | -166 |
| <b>DEL</b>          | -258 | -264  | -270 | -276  | -348 |
| <b>DELETE</b>       | 127  | -34   | -35  | -36   | -373 |
| <b>DO (F10)</b>     | -231 | -233  | -235 | -237  | -360 |
| <b>END</b>          | -259 | -265  | -271 | -277  | -349 |
| <b>ESCAPE</b>       | 27   | -37   | -38  | -39   | -370 |
| <b>HELP (F11)</b>   | -232 | -234  | -236 | -238  | -361 |
| <b>HOME</b>         | -256 | -262  | -268 | -274  | -346 |
| <b>INSERT</b>       | -255 | -261  | -267 | -273  | -345 |
| <b>NEXT</b>         | -260 | -266  | -272 | -278  | -350 |
| <b>PAUSE BR</b>     | 148  | 155   | -22  | -29   | -365 |
| <b>REMOVE</b>       | -257 | -263  | -269 | -275  | -347 |
| <b>RETURN</b>       | 13   | -49   | -50  | -51   | -374 |
| <b>SPACE</b>        | 32   | -52   | -53  | -54   | N/A  |
| <b>TAB</b>          | 9    | -46   | -47  | -48   | -371 |
| <b>Keypad 0</b>     | -55  | -69   | -83  | -97   | -331 |
| <b>Keypad 1</b>     | -56  | -70   | -84  | -98   | -332 |
| <b>Keypad 2</b>     | -57  | -71   | -85  | -99   | -333 |
| <b>Keypad 3</b>     | -58  | -72   | -86  | -100  | -334 |
| <b>Keypad 4</b>     | -59  | -73   | -87  | -101  | -335 |
| <b>Keypad 5</b>     | -60  | -74   | -88  | -102  | -336 |
| <b>Keypad 6</b>     | -61  | -75   | -89  | -103  | -337 |
| <b>Keypad 7</b>     | -62  | -76   | -90  | -104  | -338 |
| <b>Keypad 8</b>     | -63  | -77   | -91  | -105  | -339 |
| <b>Keypad 9</b>     | -64  | -78   | -92  | -106  | -340 |
| <b>Keypad .</b>     | -65  | -79   | -93  | -107  | -341 |
| <b>Keypad ,</b>     | -66  | -80   | -94  | -108  | -342 |
| <b>Keypad -</b>     | -67  | -81   | -95  | -109  | -343 |
| <b>Keypad ENTER</b> | -68  | -82   | -96  | -110  | -344 |
| <b>PF1</b>          | -239 | -243  | -247 | -251  | -327 |
| <b>PF2</b>          | -240 | -244  | -248 | -252  | -328 |
| <b>PF3</b>          | -241 | -245  | -249 | -253  | -329 |
| <b>PF4</b>          | -242 | -246  | -250 | -254  | -330 |
| <b>CURSOR RIGHT</b> | -135 | -139  | -143 | -147  | -369 |
| <b>CURSOR UP</b>    | -136 | -140  | -144 | -148  | -366 |
| <b>CURSOR LEFT</b>  | -137 | -141  | -145 | -149  | -367 |
| <b>CURSOR DOWN</b>  | -138 | -142  | -146 | -150  | -368 |

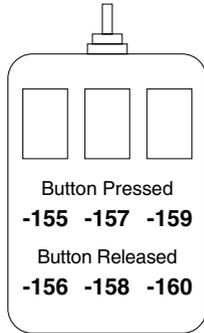
## BRITISH KEYBOARD KEY REFERENCE NUMBERS

| KEY               | NORM | SHIFT | CTRL | CT/SH | ALT  |
|-------------------|------|-------|------|-------|------|
| <b>F1</b>         | 128  | 136   | -2   | -10   | -351 |
| <b>F2</b>         | 129  | 137   | -3   | -11   | -352 |
| <b>F3</b>         | 130  | 138   | -4   | -12   | -353 |
| <b>F4</b>         | 131  | 139   | -5   | -13   | -354 |
| <b>F5</b>         | 132  | 140   | -6   | -14   | -355 |
| <b>F6</b>         | 133  | 141   | -7   | -15   | -356 |
| <b>F7</b>         | 134  | 142   | -8   | -16   | -357 |
| <b>F8</b>         | 135  | 143   | -9   | -17   | -358 |
| <b>F9</b>         | 144  | 151   | -18  | -25   | -359 |
| <b>F10 (DO)</b>   | -231 | -233  | -235 | -237  | -360 |
| <b>F11 (HELP)</b> | -232 | -234  | -236 | -238  | -361 |
| <b>F12</b>        | 145  | 152   | -19  | -26   | -362 |
| <b>F13</b>        | 146  | 153   | -20  | -27   | -363 |
| <b>F14</b>        | 147  | 154   | -21  | -28   | -364 |
| <b>0</b>          | 48   | 41    | N/A  | N/A   | -279 |
| <b>1</b>          | 49   | 33    | N/A  | N/A   | -280 |
| <b>2</b>          | 50   | 64    | 0    | 0     | -281 |
| <b>3</b>          | 51   | 35    | 27   | 27    | -282 |
| <b>4</b>          | 52   | 36    | 28   | 28    | -283 |
| <b>5</b>          | 53   | 37    | 29   | 29    | -284 |
| <b>6</b>          | 54   | 94    | 30   | 30    | -285 |
| <b>7</b>          | 55   | 38    | 31   | 31    | -286 |
| <b>8</b>          | 56   | 42    | 127  | 127   | -287 |
| <b>9</b>          | 57   | 40    | N/A  | N/A   | -288 |
| <b>\  </b>        | 92   | 124   | 28   | 28    | -326 |
| <b>&lt; &gt;</b>  | 60   | 62    | 60   | 62    | -376 |
| <b>, &lt;</b>     | 44   | 60    | 44   | 60    | -317 |
| <b>- _</b>        | 45   | 95    | 31   | 31    | -318 |
| <b>. &gt;</b>     | 46   | 62    | 46   | 62    | -319 |
| <b>/ ?</b>        | 47   | 63    | 31   | 31    | -320 |
| <b>; :</b>        | 59   | 58    | 59   | 58    | -315 |
| <b>' "</b>        | 96   | 34    | 96   | 34    | -325 |
| <b>=</b>          | 61   | 43    | N/A  | N/A   | -316 |
| <b>[</b>          | 91   | 123   | 27   | 27    | -322 |
| <b>]</b>          | 93   | 125   | 29   | 29    | -324 |
| <b>` ~</b>        | 39   | 126   | 30   | 30    | -321 |
| <b># ~</b>        | 23   | 126   | 23   | 126   | -323 |

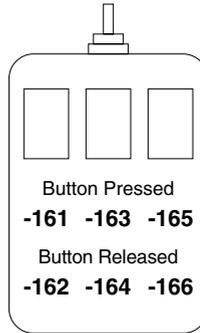
**BRITISH KEYBOARD KEY REFERENCE NUMBERS**

| KEY      | NORM | SHIFT | CTRL | CT/SH | ALT  |
|----------|------|-------|------|-------|------|
| <b>A</b> | 97   | 65    | 1    | 1     | -289 |
| <b>B</b> | 98   | 66    | 2    | 2     | -290 |
| <b>C</b> | 99   | 67    | 3    | 3     | -291 |
| <b>D</b> | 100  | 68    | 4    | 4     | -292 |
| <b>E</b> | 101  | 69    | 5    | 5     | -293 |
| <b>F</b> | 102  | 70    | 6    | 6     | -294 |
| <b>G</b> | 103  | 71    | 7    | 7     | -295 |
| <b>H</b> | 104  | 72    | 8    | 8     | -296 |
| <b>I</b> | 105  | 73    | 9    | 9     | -297 |
| <b>J</b> | 106  | 74    | 10   | 10    | -298 |
| <b>K</b> | 107  | 75    | 11   | 11    | -299 |
| <b>L</b> | 108  | 76    | 12   | 12    | -300 |
| <b>M</b> | 109  | 77    | 13   | 13    | -301 |
| <b>N</b> | 110  | 78    | 14   | 14    | -302 |
| <b>O</b> | 111  | 79    | 15   | 15    | -303 |
| <b>P</b> | 112  | 80    | 16   | 16    | -304 |
| <b>Q</b> | 113  | 81    | 17   | 17    | -305 |
| <b>R</b> | 114  | 82    | 18   | 18    | -306 |
| <b>S</b> | 115  | 83    | 19   | 19    | -307 |
| <b>T</b> | 116  | 84    | 20   | 20    | -308 |
| <b>U</b> | 117  | 85    | 21   | 21    | -309 |
| <b>V</b> | 118  | 86    | 22   | 22    | -310 |
| <b>W</b> | 119  | 87    | 23   | 23    | -311 |
| <b>X</b> | 120  | 88    | 24   | 24    | -312 |
| <b>Y</b> | 121  | 89    | 25   | 25    | -313 |
| <b>Z</b> | 122  | 90    | 26   | 26    | -314 |

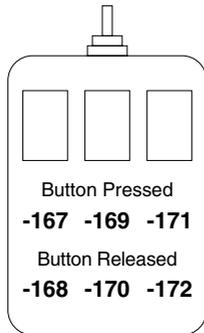
## MOUSE BUTTON REFERENCE NUMBERS



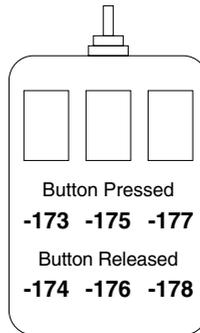
**Button**



**Shift + Button**



**Ctrl + Button**



**Ctrl + Shift + Button**

Programmed strings for Button Released reference numbers are transmitted by releasing the button only when GIN has been enabled for report transmission on button release.

*Notes*

# D

## Character Sets

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This appendix shows the tables of characters that are supported by TeemTalk.

### Introduction

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The following pages show the character sets that are supported when TeemTalk is in Tek Alpha or VT220 Alpha overall mode (as explained below). The mode in which each set is valid is indicated in brackets under the heading.

TeemTalk can emulate either a Tek 4100 series terminal or a DEC VT220 terminal. The software will switch automatically between these two overall modes only when particular sub-mode switches take place. These are the switches which require the terminal emulation to change from Tek to DEC VT220. The sub-modes of the two emulations are as follows:

| <b>Tek Sub-Modes:</b> | <b>VT220 Sub-Modes:</b> |
|-----------------------|-------------------------|
| VT52                  | VT52                    |
| ANSI (VT100)          | VT100                   |
| EDIT                  | VT220 7-Bit             |
| TEK                   | VT220 8-Bit             |

Each character set consists of a series of control characters and displayable characters. Displayable characters are alphanumeric, symbolic or graphic characters that can be displayed on the screen or printed by a hardcopy device. Control characters enable the terminal emulation or the printer to perform specific tasks, such as a line feed or carriage return. These will be actioned when received from the host or when TeemTalk is in local mode and they are entered from the keyboard.

*Note: When the **Display Controls** option in the **Emulation Settings** dialog box is selected, a representation of most control characters received will be displayed on the screen instead of actioned.*

To enter a control character from the keyboard, first find the displayable character equivalent by adding 64 to the decimal value of the control character in the relevant character set table. For example, the control character **CR** (carriage return) has a decimal value of 13. Adding 64 makes 77 which is the decimal value of the displayable character **M**. When the **Ctrl** (control) key is held down and **Shift + M** is pressed (or **M** alone if Caps Lock is on), this will generate a **CR** code in local mode.

Some setup options require you to specify one or more control characters. A control character can be specified by typing ^ to represent the **Ctrl** key, immediately followed by the displayable character equivalent of the control character as described in the previous paragraph. For example, **^M**, represents **Ctrl + M**, which generates the control character **CR**.

Another way of specifying control characters is by entering the decimal value of the ASCII character. Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **\_013**.

## ASCII (MULTINATIONAL 7-BIT) CHARACTER SET (Tek & VT220 Alpha Modes)

| COLUMN                  | 0           | 1                   | 2          | 3         | 4         | 5         | 6         | 7           |
|-------------------------|-------------|---------------------|------------|-----------|-----------|-----------|-----------|-------------|
| ROW                     | 0000        | 0001                | 0010       | 0011      | 0100      | 0101      | 0110      | 0111        |
| 8 7 6 5 4 3 2 1<br>BITS |             |                     |            |           |           |           |           |             |
| 0                       | 0000<br>NUL | 0001<br>DLE         | 0010<br>SP | 0011<br>0 | 0100<br>@ | 0101<br>P | 0110<br>, | 0111<br>p   |
| 1                       | 0001<br>SOH | 0010<br>DC1<br>XON  | 0011<br>!  | 0100<br>1 | 0101<br>A | 0110<br>Q | 0111<br>a | 1000<br>q   |
| 2                       | 0010<br>STX | 0011<br>DC2         | 0100<br>"  | 0101<br>2 | 0110<br>B | 0111<br>R | 1000<br>b | 1001<br>r   |
| 3                       | 0011<br>ETX | 0100<br>DC3<br>XOFF | 0101<br>#  | 0110<br>3 | 0111<br>C | 1000<br>S | 1001<br>c | 1010<br>s   |
| 4                       | 0100<br>EOT | 0101<br>DC4         | 0110<br>\$ | 0111<br>4 | 1000<br>D | 1001<br>T | 1010<br>d | 1011<br>t   |
| 5                       | 0101<br>ENQ | 0110<br>NAK         | 1000<br>%  | 1001<br>5 | 1010<br>E | 1011<br>U | 1100<br>e | 1101<br>u   |
| 6                       | 0110<br>ACK | 0111<br>SYN         | 1001<br>&  | 1010<br>6 | 1011<br>F | 1100<br>V | 1101<br>f | 1110<br>v   |
| 7                       | 0111<br>BEL | 1000<br>ETB         | 1001<br>'  | 1010<br>7 | 1011<br>G | 1100<br>W | 1101<br>g | 1110<br>w   |
| 8                       | 1000<br>BS  | 1001<br>CAN         | 1010<br>(  | 1011<br>8 | 1100<br>H | 1101<br>X | 1110<br>h | 1111<br>x   |
| 9                       | 1001<br>HT  | 1010<br>EM          | 1011<br>)  | 1100<br>9 | 1101<br>I | 1110<br>Y | 1111<br>i | 1200<br>y   |
| 10                      | 1010<br>LF  | 1011<br>SUB         | 1100<br>*  | 1101<br>: | 1110<br>J | 1111<br>Z | 1200<br>j | 1201<br>z   |
| 11                      | 1011<br>VT  | 1100<br>ESC         | 1101<br>+  | 1110<br>; | 1111<br>K | 1200<br>[ | 1201<br>k | 1202<br>{   |
| 12                      | 1100<br>FF  | 1101<br>FS          | 1110<br>,  | 1111<br>< | 1200<br>L | 1201<br>\ | 1202<br>l | 1203<br>    |
| 13                      | 1101<br>CR  | 1110<br>GS          | 1111<br>-  | 1200<br>= | 1201<br>M | 1202<br>] | 1203<br>m | 1204<br>}   |
| 14                      | 1110<br>SO  | 1111<br>RS          | 1200<br>.  | 1201<br>> | 1202<br>N | 1203<br>^ | 1204<br>n | 1205<br>~   |
| 15                      | 1111<br>SI  | 1200<br>US          | 1201<br>/  | 1202<br>? | 1203<br>O | 1204<br>_ | 1205<br>o | 1206<br>DEL |

**KEY:**

|     |    |             |
|-----|----|-------------|
| ESC | 33 | OCTAL       |
|     | 27 | DECIMAL     |
|     | 1B | HEXADECIMAL |

The ASCII (American Standard Code for Information Interchange) character set will be selected when the **Keyboard Language** option in the **Terminal Settings** dialog box is set to **North American**, or the **Multinational** option in the **Emulation Settings** dialog box is selected. This table forms the first half of the Multinational character set, the second half of which is the **DEC Additional** set.

**DEC ADDITIONAL (MULTINATIONAL 8-BIT) CHARACTER SET  
(VT220 Alpha Mode)**

| 8                             | 9                             | 10                            | 11                            | 12                            | 13                            | 14                            | 15                            | COLUMN   | ROWS        |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|-------------|
| 1 <sub>0</sub> 0 <sub>0</sub> | 1 <sub>0</sub> 0 <sub>1</sub> | 1 <sub>0</sub> 1 <sub>0</sub> | 1 <sub>0</sub> 1 <sub>1</sub> | 1 <sub>1</sub> 0 <sub>0</sub> | 1 <sub>1</sub> 0 <sub>1</sub> | 1 <sub>1</sub> 1 <sub>0</sub> | 1 <sub>1</sub> 1 <sub>1</sub> | 8 <sub>7</sub> BITS<br>6 <sub>5</sub><br>4 <sub>3</sub> 2 <sub>1</sub> | R<br>O<br>W |
| 200<br>128<br>80              | DCS<br>220<br>144<br>90       | 240<br>160<br>A0              | °<br>260<br>176<br>B0         | À<br>300<br>192<br>C0         | à<br>320<br>208<br>D0         | À<br>300<br>192<br>C0         | à<br>320<br>208<br>D0         | 360<br>240<br>F0   | 0000 0      |
| 201<br>129<br>81              | PU1<br>221<br>145<br>91       | ì<br>241<br>161<br>A1         | ±<br>261<br>177<br>B1         | Á<br>301<br>193<br>C1         | ñ<br>321<br>209<br>D1         | Á<br>301<br>193<br>C1         | ñ<br>321<br>209<br>D1         | 361<br>241<br>F1   | 0001 1      |
| 202<br>130<br>82              | PU2<br>222<br>146<br>92       | ç<br>242<br>162<br>A2         | 2<br>262<br>178<br>B2         | Â<br>302<br>194<br>C2         | ò<br>322<br>210<br>D2         | Â<br>302<br>194<br>C2         | ò<br>322<br>210<br>D2         | 362<br>242<br>F2   | 0010 2      |
| 203<br>131<br>83              | STS<br>223<br>147<br>93       | £<br>243<br>163<br>A3         | ³<br>263<br>179<br>B3         | Ã<br>303<br>195<br>C3         | ó<br>323<br>211<br>D3         | Ã<br>303<br>195<br>C3         | ó<br>323<br>211<br>D3         | 363<br>243<br>F3   | 0011 3      |
| 204<br>132<br>84              | IND<br>224<br>148<br>94       | ¨<br>244<br>164<br>A4         |                               | Ä<br>304<br>196<br>C4         | ô<br>324<br>212<br>D4         | Ä<br>304<br>196<br>C4         | ô<br>324<br>212<br>D4         | 364<br>244<br>F4   | 0100 4      |
| 205<br>133<br>85              | NEL<br>225<br>149<br>95       | ¥<br>245<br>165<br>A5         | µ<br>265<br>181<br>B5         | Å<br>305<br>197<br>C5         | õ<br>325<br>213<br>D5         | Å<br>305<br>197<br>C5         | õ<br>325<br>213<br>D5         | 365<br>245<br>F5   | 0101 5      |
| 206<br>134<br>86              | SSA<br>226<br>150<br>96       | ı<br>246<br>166<br>A6         | ¶<br>266<br>182<br>B6         | Æ<br>306<br>198<br>C6         | ö<br>326<br>214<br>D6         | Æ<br>306<br>198<br>C6         | ö<br>326<br>214<br>D6         | 366<br>246<br>F6   | 0110 6      |
| 207<br>135<br>87              | ESA<br>227<br>151<br>97       | §<br>247<br>167<br>A7         | ·<br>267<br>183<br>B7         | Ç<br>307<br>199<br>C7         | ç<br>327<br>215<br>D7         | Ç<br>307<br>199<br>C7         | ç<br>327<br>215<br>D7         | 367<br>247<br>F7   | 0111 7      |
| 210<br>136<br>88              | HTS<br>230<br>152<br>98       | ¸<br>248<br>168<br>A8         |                               | È<br>310<br>200<br>C8         | ø<br>330<br>216<br>D8         | È<br>310<br>200<br>C8         | ø<br>330<br>216<br>D8         | 370<br>248<br>F8   | 1000 8      |
| 211<br>137<br>89              | HTJ<br>231<br>153<br>99       | ©<br>251<br>169<br>A9         | ¹<br>271<br>185<br>B9         | É<br>311<br>201<br>C9         | ù<br>331<br>217<br>D9         | É<br>311<br>201<br>C9         | ù<br>331<br>217<br>D9         | 371<br>249<br>F9   | 1001 9      |
| 212<br>138<br>8A              | VTS<br>232<br>154<br>9A       | ª<br>252<br>170<br>AA         | º<br>272<br>186<br>BA         | Ê<br>312<br>202<br>CA         | ú<br>332<br>218<br>DA         | Ê<br>312<br>202<br>CA         | ú<br>332<br>218<br>DA         | 372<br>250<br>FA   | 1010 10     |
| 213<br>139<br>8B              | PLD<br>233<br>155<br>9B       | «<br>253<br>171<br>AB         | »<br>273<br>187<br>BB         | Ë<br>313<br>203<br>CB         | û<br>333<br>219<br>DB         | Ë<br>313<br>203<br>CB         | û<br>333<br>219<br>DB         | 373<br>251<br>FB   | 1011 11     |
| 214<br>140<br>8C              | PLU<br>234<br>156<br>9C       | ¼<br>254<br>172<br>AC         | ¼<br>274<br>188<br>BC         | Ì<br>314<br>204<br>CC         | ü<br>334<br>220<br>DC         | Ì<br>314<br>204<br>CC         | ü<br>334<br>220<br>DC         | 374<br>252<br>FC   | 1100 12     |
| 215<br>141<br>8D              | RI<br>235<br>157<br>9D        | ½<br>255<br>173<br>AD         | ½<br>275<br>189<br>BD         | Í<br>315<br>205<br>CD         | ÿ<br>335<br>221<br>DD         | Í<br>315<br>205<br>CD         | ÿ<br>335<br>221<br>DD         | 375<br>253<br>FD   | 1101 13     |
| 216<br>142<br>8E              | SS2<br>236<br>158<br>9E       | ¾<br>256<br>174<br>AE         |                               | Î<br>316<br>206<br>CE         |                               | Î<br>316<br>206<br>CE         |                               | 376<br>254<br>FE   | 1110 14     |
| 217<br>143<br>8F              | SS3<br>237<br>159<br>9F       | ¿<br>257<br>175<br>AF         | ¿<br>277<br>191<br>BF         | Ï<br>317<br>207<br>CF         | ß<br>337<br>223<br>DF         | Ï<br>317<br>207<br>CF         | ß<br>337<br>223<br>DF         | 377<br>255<br>FF   | 1111 15     |

**KEY:** ESC 33 OCTAL  
27 DECIMAL  
1B HEXADECIMAL

This is the second half of the Multinational character set when TeemTalk is in VT220 Alpha overall mode (the first half is the ASCII character set). These characters may be generated when TeemTalk is in **VT220 7** or **8** bit mode and the **Multinational** option in the **Emulation Settings** dialog box is selected.

## NATIONAL REPLACEMENT CHARACTERS (VT220 Alpha Mode)

|                              |   |    |                             |     |                             |     |     |     |     |     |     |                             |     |   |   |   |
|------------------------------|---|----|-----------------------------|-----|-----------------------------|-----|-----|-----|-----|-----|-----|-----------------------------|-----|---|---|---|
| BINARY BIT                   | 8 | 0  | 0                           | 0   | 0                           | 0   | 0   | 0   | 0   | 0   | 0   | 0                           | 0   | 0 | 0 | 0 |
|                              | 7 | 0  | 1                           | 1   | 1                           | 1   | 1   | 1   | 1   | 1   | 1   | 1                           | 1   | 1 | 1 | 1 |
|                              | 6 | 1  | 0                           | 0   | 0                           | 0   | 0   | 0   | 0   | 1   | 1   | 1                           | 1   | 1 | 1 | 1 |
|                              | 5 | 0  | 0                           | 1   | 1                           | 1   | 1   | 1   | 1   | 1   | 1   | 1                           | 1   | 1 | 1 | 1 |
|                              | 4 | 0  | 0                           | 1   | 1                           | 1   | 1   | 1   | 1   | 0   | 1   | 1                           | 1   | 1 | 1 | 1 |
|                              | 3 | 0  | 0                           | 0   | 1                           | 1   | 1   | 1   | 1   | 0   | 0   | 1                           | 1   | 1 | 1 | 1 |
|                              | 2 | 1  | 0                           | 1   | 0                           | 0   | 1   | 1   | 1   | 0   | 1   | 0                           | 1   | 0 | 0 | 1 |
|                              | 1 | 1  | 0                           | 1   | 0                           | 1   | 0   | 1   | 0   | 1   | 0   | 1                           | 0   | 1 | 0 | 0 |
| OCTAL                        |   | 43 | 100                         | 133 | 134                         | 135 | 136 | 137 | 140 | 173 | 174 | 175                         | 176 |   |   |   |
| DECIMAL                      |   | 35 | 64                          | 91  | 92                          | 93  | 94  | 95  | 96  | 123 | 124 | 125                         | 126 |   |   |   |
| HEXADECIMAL                  |   | 23 | 40                          | 5B  | 5C                          | 5D  | 5E  | 5F  | 60  | 7B  | 7C  | 7D                          | 7E  |   |   |   |
| ASCII                        |   | #  | @                           | [   | \                           | ]   | ^   | _   | `   | {   |     | }                           | ~   |   |   |   |
| British                      |   | £  | @                           | [   | \                           | ]   | ^   | _   | `   | {   |     | }                           | ~   |   |   |   |
| Canadian                     |   | #  | à                           | â   | ç                           | ê   | î   | _   | ô   | é   | ù   | è                           | û   |   |   |   |
| Danish<br>Norwegian          |   | #  | Ä                           | Æ   | Ø                           | Å   | Ü   | _   | ä   | æ   | ø   | å                           | ü   |   |   |   |
| Dutch                        |   | £  | <sup>3</sup> / <sub>4</sub> | ij  | <sup>1</sup> / <sub>2</sub> | l   | ^   | _   | `   | ¨   | fl  | <sup>1</sup> / <sub>4</sub> | ´   |   |   |   |
| Finnish                      |   | #  | @                           | Ä   | Ö                           | Å   | Ü   | _   | é   | ä   | ö   | å                           | ü   |   |   |   |
| French<br>Belgian            |   | £  | à                           | °   | ç                           | §   | ^   | _   | `   | é   | ù   | è                           | ¨   |   |   |   |
| German                       |   | #  | §                           | Ä   | Ö                           | Ü   | ^   | _   | `   | ä   | ö   | ü                           | ß   |   |   |   |
| Italian                      |   | £  | §                           | °   | ç                           | é   | ^   | _   | ù   | à   | ò   | è                           | ì   |   |   |   |
| Portuguese                   |   | #  | @                           | Ã   | Ç                           | Õ   | ^   | _   | `   | ã   | ç   | õ                           | ~   |   |   |   |
| Spanish                      |   | £  | §                           | ı   | Ñ                           | ı   | ^   | _   | `   | °   | ñ   | ç                           | ~   |   |   |   |
| Swedish                      |   | #  | É                           | Ä   | Ö                           | Å   | Ü   | _   | é   | ä   | ö   | å                           | ü   |   |   |   |
| Swiss French<br>Swiss German |   | ù  | à                           | é   | ç                           | ê   | î   | è   | ô   | ä   | ö   | ü                           | û   |   |   |   |

This table shows the characters that replace certain ASCII characters in VT220 Alpha overall mode when the **Multinational** option in the **Emulation Settings** dialog box is not selected. The national character set consists of the ASCII set with the changed characters listed on the line for the selected keyboard nationality.

## NATIONAL REPLACEMENT CHARACTERS (Tek Alpha Mode)

|                     |   |    |     |     |     |     |     |     |     |     |     |   |
|---------------------|---|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| BINARY BIT          | 8 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|                     | 7 | 0  | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1 |
|                     | 6 | 1  | 0   | 0   | 0   | 0   | 1   | 1   | 1   | 1   | 1   | 1 |
|                     | 5 | 0  | 0   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1 |
|                     | 4 | 0  | 0   | 1   | 1   | 1   | 0   | 1   | 1   | 1   | 1   | 1 |
|                     | 3 | 0  | 0   | 0   | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 1 |
|                     | 2 | 1  | 0   | 1   | 0   | 0   | 0   | 1   | 0   | 0   | 1   | 1 |
|                     | 1 | 1  | 0   | 1   | 0   | 1   | 0   | 1   | 0   | 1   | 0   | 0 |
| OCTAL               |   | 43 | 100 | 133 | 134 | 135 | 140 | 173 | 174 | 175 | 176 |   |
| DECIMAL             |   | 35 | 64  | 91  | 92  | 93  | 96  | 123 | 124 | 125 | 126 |   |
| HEXADECIMAL         |   | 23 | 40  | 5B  | 5C  | 5D  | 60  | 7B  | 7C  | 7D  | 7E  |   |
| ASCII               |   | #  | @   | [   | \   | ]   | `   | {   |     | }   | ~   |   |
| British             |   | £  | @   | [   | \   | ]   | `   | {   |     | }   | -   |   |
| Danish<br>Norwegian |   | #  | @   | Æ   | Ø   | Å   | `   | æ   | ø   | å   | -   |   |
| French              |   | £  | à   | °   | ç   | §   | μ   | é   | ù   | è   | ¨   |   |
| German              |   | #  | §   | Ä   | Ö   | Ü   | `   | ä   | ö   | ü   | ß   |   |
| Swedish             |   | #  | @   | Ä   | Ö   | Å   | `   | ä   | ö   | å   | -   |   |

This table shows the characters that replace certain ASCII characters in Tek overall mode for the keyboard nationality chosen in the **Terminal Settings** dialog box. The national character set consists of the ASCII set with the changed characters listed on the line for the selected keyboard nationality.

**LINE DRAWING CHARACTER SET  
(Tek & VT220 Alpha Modes)**

| COLUMN | 0           | 1                | 2          | 3         | 4         | 5         | 6              | 7         |
|--------|-------------|------------------|------------|-----------|-----------|-----------|----------------|-----------|
| ROW    | 0000        | 0001             | 0010       | 0011      | 0100      | 0101      | 0110           | 0111      |
| 0      | 0000<br>NUL | 0001<br>DLE      | 0010<br>SP | 0011<br>0 | 0100<br>@ | 0101<br>P | 0110<br>◆      | 0111<br>▬ |
| 1      | 0001<br>SOH | 0010<br>DC1 XON  | 0011<br>!  | 0100<br>1 | 0101<br>A | 0110<br>Q | 0111<br>■      | ▬         |
| 2      | 0010<br>STX | 0011<br>DC2      | 0100<br>"  | 0101<br>2 | 0110<br>B | 0111<br>R | H <sub>T</sub> | ▬         |
| 3      | 0011<br>ETX | 0100<br>DC3 XOFF | 0101<br>#  | 0110<br>3 | 0111<br>C | 0111<br>S | F <sub>F</sub> | ▬         |
| 4      | 0100<br>EOT | 0101<br>DC4      | 0101<br>\$ | 0110<br>4 | 0111<br>D | 0111<br>T | C <sub>R</sub> | ▬         |
| 5      | 0101<br>ENQ | 0110<br>NAK      | 0111<br>%  | 0111<br>5 | 0111<br>E | 0111<br>U | L <sub>F</sub> | ▬         |
| 6      | 0110<br>ACK | 0111<br>SYN      | 0111<br>&  | 0111<br>6 | 0111<br>F | 0111<br>V | °              | ▬         |
| 7      | 0111<br>BEL | 0111<br>ETB      | 0111<br>'  | 0111<br>7 | 0111<br>G | 0111<br>W | ±              | ▬         |
| 8      | 1000<br>BS  | 0111<br>CAN      | 0111<br>(  | 0111<br>8 | 0111<br>H | 0111<br>X | N <sub>L</sub> | ▬         |
| 9      | 1001<br>HT  | 0111<br>EM       | 0111<br>)  | 0111<br>9 | 0111<br>I | 0111<br>Y | V <sub>T</sub> | ≤         |
| 10     | 1010<br>LF  | 0111<br>SUB      | 0111<br>*  | 0111<br>: | 0111<br>J | 0111<br>Z | J              | ≥         |
| 11     | 1011<br>VT  | 0111<br>ESC      | 0111<br>+  | 0111<br>; | 0111<br>K | 0111<br>[ | L              | π         |
| 12     | 1100<br>FF  | 0111<br>FS       | 0111<br>,  | 0111<br>< | 0111<br>L | 0111<br>\ | Γ              | ≠         |
| 13     | 1101<br>CR  | 0111<br>GS       | 0111<br>-  | 0111<br>= | 0111<br>M | 0111<br>] | L              | £         |
| 14     | 1110<br>SO  | 0111<br>RS       | 0111<br>.  | 0111<br>> | 0111<br>N | 0111<br>^ | +              | .         |
| 15     | 1111<br>SI  | 0111<br>US       | 0111<br>/  | 0111<br>? | 0111<br>O | 0111<br>_ | ▬              | DEL       |

**KEY:** ESC 

|    |
|----|
| 33 |
| 27 |
| 1B |

 OCTAL  
DECIMAL  
HEXADECIMAL

This is a special character set which is used by some applications.

### ADDITIONAL CHARACTER SET (Tek Alpha Mode)

| COLUMN                               | 0    |     | 1             |             | 2              |    | 3              |    | 4              |   | 5               |   | 6               |                | 7                |   |                  |
|--------------------------------------|------|-----|---------------|-------------|----------------|----|----------------|----|----------------|---|-----------------|---|-----------------|----------------|------------------|---|------------------|
| ROW                                  | 0000 |     | 0001          |             | 0010           |    | 0011           |    | 0100           |   | 0101            |   | 0110            |                | 0111             |   |                  |
| 8<br>7<br>6<br>5<br>4<br>3<br>2<br>1 | 0000 |     | 0001          |             | 0010           |    | 0011           |    | 0100           |   | 0101            |   | 0110            |                | 0111             |   |                  |
| 0                                    | 0000 | NUL | 0<br>0<br>0   | DLE         | 20<br>16<br>10 | SP | 40<br>32<br>20 | 0  | 60<br>48<br>30 | — | 100<br>64<br>40 | Ñ | 120<br>80<br>50 | ◆              | 140<br>96<br>60  | ▬ | 160<br>112<br>70 |
| 1                                    | 0001 | SOH | 1<br>1<br>1   | DC1<br>XON  | 21<br>17<br>11 | Ä  | 41<br>33<br>21 | 1  | 61<br>49<br>31 | ¢ | 101<br>65<br>41 | ñ | 121<br>81<br>51 | ■              | 141<br>97<br>61  | ▬ | 161<br>113<br>71 |
| 2                                    | 0010 | STX | 2<br>2<br>2   | DC2         | 22<br>18<br>12 | ä  | 42<br>34<br>22 | 2  | 62<br>50<br>32 | ı | 102<br>66<br>42 | ı | 122<br>82<br>52 | H <sub>T</sub> | 142<br>98<br>62  | ▬ | 162<br>114<br>72 |
| 3                                    | 0011 | ETX | 3<br>3<br>3   | DC3<br>XOFF | 23<br>19<br>13 | Ä  | 43<br>35<br>23 | 3  | 63<br>51<br>33 | † | 103<br>67<br>43 | i | 123<br>83<br>53 | F <sub>F</sub> | 143<br>99<br>63  | ▬ | 163<br>115<br>73 |
| 4                                    | 0100 | EOT | 4<br>4<br>4   | DC4         | 24<br>20<br>14 | â  | 44<br>36<br>24 | 4  | 64<br>52<br>34 | □ | 104<br>68<br>44 | α | 124<br>84<br>54 | C <sub>R</sub> | 144<br>100<br>64 | ▬ | 164<br>116<br>74 |
| 5                                    | 0101 | ENQ | 5<br>5<br>5   | NAK         | 25<br>21<br>15 | Æ  | 45<br>37<br>25 | 5  | 65<br>53<br>35 | ■ | 105<br>69<br>45 | σ | 125<br>85<br>55 | L <sub>F</sub> | 145<br>101<br>65 | ▬ | 165<br>117<br>75 |
| 6                                    | 0110 | ACK | 6<br>6<br>6   | SYN         | 26<br>22<br>16 | æ  | 46<br>38<br>26 | 6  | 66<br>54<br>36 | ● | 106<br>70<br>46 | τ | 126<br>86<br>56 | o              | 146<br>102<br>66 | ▬ | 166<br>118<br>76 |
| 7                                    | 0111 | BEL | 7<br>7<br>7   | ETB         | 27<br>23<br>17 | à  | 47<br>39<br>27 | 7  | 67<br>55<br>37 | △ | 107<br>71<br>47 | ϕ | 127<br>87<br>57 | ±              | 147<br>103<br>67 | ▬ | 167<br>119<br>77 |
| 8                                    | 1000 | BS  | 10<br>8<br>8  | CAN         | 30<br>24<br>18 | ç  | 50<br>40<br>28 | 8  | 70<br>56<br>38 | ð | 110<br>72<br>48 | μ | 130<br>88<br>58 | N <sub>L</sub> | 150<br>104<br>68 | ▬ | 170<br>120<br>78 |
| 9                                    | 1001 | HT  | 11<br>9<br>9  | EM          | 31<br>25<br>19 | é  | 51<br>41<br>29 | 9  | 71<br>57<br>39 | λ | 111<br>73<br>49 | Σ | 131<br>89<br>59 | v <sub>T</sub> | 151<br>105<br>69 | ▬ | 171<br>121<br>79 |
| 10                                   | 1010 | LF  | 12<br>10<br>A | SUB         | 32<br>26<br>1A | è  | 52<br>42<br>2A | 10 | 72<br>58<br>3A | ⌈ | 112<br>74<br>4A | Ω | 132<br>90<br>5A | ▬              | 152<br>106<br>6A | ▬ | 172<br>122<br>7A |
| 11                                   | 1011 | VT  | 13<br>11<br>B | ESC         | 33<br>27<br>1B | Ö  | 53<br>43<br>2B | 11 | 73<br>59<br>3B | ⌋ | 113<br>75<br>4B | ƒ | 133<br>91<br>5B | ▬              | 153<br>107<br>6B | ▬ | 173<br>123<br>7B |
| 12                                   | 1100 | FF  | 14<br>12<br>C | FS          | 34<br>28<br>1C | ö  | 54<br>44<br>2C | 12 | 74<br>60<br>3C | ⌋ | 114<br>76<br>4C | ƒ | 134<br>92<br>5C | ▬              | 154<br>108<br>6C | ▬ | 174<br>124<br>7C |
| 13                                   | 1101 | CR  | 15<br>13<br>D | GS          | 35<br>29<br>1D | ø  | 55<br>45<br>2D | 13 | 75<br>61<br>3D | ⌋ | 115<br>77<br>4D | ÷ | 135<br>93<br>5D | ▬              | 155<br>109<br>6D | ▬ | 175<br>125<br>7D |
| 14                                   | 1110 | SO  | 16<br>14<br>E | RS          | 36<br>30<br>1E | Û  | 56<br>46<br>2E | 14 | 76<br>62<br>3E | ⌋ | 116<br>78<br>4E | ≈ | 136<br>94<br>5E | ▬              | 156<br>110<br>6E | ▬ | 176<br>126<br>7E |
| 15                                   | 1111 | SI  | 17<br>15<br>F | US          | 37<br>31<br>1F | ü  | 57<br>47<br>2F | 15 | 77<br>63<br>3F | ∞ | 117<br>79<br>4F | √ | 137<br>95<br>5F | ▬              | 157<br>111<br>6F | ▬ | 177<br>127<br>7F |

**KEY:**    ESC    33    OCTAL  
                  27    DECIMAL  
                  1B    HEXADECIMAL

These characters may be generated when TeemTalk is in Tek Alpha mode.

## E

# Host Command Summary

**This appendix lists the host and Tek Primary Setup commands that are valid in each terminal emulation mode. TeemTalk-specific commands are listed at the back.**

The following conventions are used in this command list:

Spaces in a command are for clarity only and are not to be entered as part of the command. A space character that is part of the command will be shown as SP.

An asterisk (\*) in a command indicates the location of one or more parameters except otherwise indicated next to the command.

## VT52 Mode

| CHARACTER SET SELECTION                        | HOST                | PRIMARY SETUP |
|--|---------------------|---------------|
| Invoke G0 character set                        | SI                  |               |
| Invoke G1 character set                        | SO                  |               |
| Select G0 character set                        | ESC G               |               |
| Select Line Drawing character set              | ESC F               |               |
| CURSOR   | HOST                | PRIMARY SETUP |
| Direct cursor addressing (1 to 96 = SP to DEL) | ESC Y *line *column |               |
| Insert FF character & advance cursor           | FF                  |               |
| Line feed                                      | LF                  |               |
| Move cursor down one line                      | ESC B               |               |
| Move cursor down one line                      | VT                  |               |
| Move cursor home                               | ESC H               |               |
| Move cursor one column left                    | BS                  |               |
| Move cursor one column left                    | ESC D               |               |
| Move cursor one column right                   | ESC C               |               |
| Move cursor to left margin of current line     | CR                  |               |
| Move cursor to next tab stop                   | HT                  |               |
| Move cursor up one line                        | ESC A               |               |
| Reverse line feed                              | ESC I               |               |

| <b>TEXT ERASURE</b>         | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|-----------------------------|-------------|----------------------|
| Erase text to end of line   | ESC K       |                      |
| Erase text to end of screen | ESC J       |                      |

| <b>GENERAL</b>                              | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|---|-------------|----------------------|
| Cancel current ESC sequence & display error | CAN         |                      |
| Sound audible tone                          | BEL         |                      |

| <b>MODE SELECTION</b>  | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|--|-------------|----------------------|
| Select terminal emulation mode<br>(Host * 0 = Tek, 1 = ANSI, 2 = Edit, 3 = VT52,<br>5 = VT100N, 6 = VT220N, 7 = VT220M7,<br>8 = VT220M8) | ESC % ! *   | CODE *               |
| Select numeric keypad application mode   | ESC =       |                      |
| Select numeric keypad normal mode  | ESC >       |                      |
| Select VT100 mode  | ESC <       |                      |

| <b>PRINTING</b>      | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|----------------------|-------------|----------------------|
| Auto print off       | ESC _       |                      |
| Auto print on        | ESC ^       |                      |
| Print controller off | ESC X       |                      |
| Print controller on  | ESC W       |                      |

| <b>REPORTS</b>                      | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|-------------------------------------|-------------|----------------------|
| Request mode identification report  | ESC Z       |                      |
| Send terminal emulation mode report | ESC # ! 0   |                      |

# ANSI VT100 Mode

## CHARACTER ATTRIBUTES

|  |                           |
|--|---------------------------|
| Assign * attribute(s) to following characters  | ESC [ * m                 |
| Default attributes                             | 0                         |
| Bold on  | 1                         |
| Underline on                                   | 4                         |
| Flashing on                                    | 5                         |
| Inverse video on                               | 7                         |
| Half intensity off                             | 22                        |
| Underline off                                  | 24                        |
| Flashing off                                   | 25                        |
| Inverse video off                              | 27                        |
| Black foreground                               | 30                        |
| Red foreground                                 | 31                        |
| Green foreground                               | 32                        |
| Yellow foreground                              | 33                        |
| Blue foreground                                | 34                        |
| Magenta foreground                             | 35                        |
| Cyan foreground                                | 36                        |
| White foreground                               | 37                        |
| White foreground                               | 39                        |
| Deselect underline character mode              | ESC [ < 1 h      DAMODE * |
| Double width & height (top half) characters    | ESC # 3                   |
| Double width & height (bottom half) characters | ESC # 4                   |
| Double width single height characters          | ESC # 6                   |
| Select underline character mode                | ESC [ < 1 1      DAMODE * |
| Single width & height (normal) characters      | ESC # 5                   |

## CHARACTER SET SELECTION

|                                       | HOST    | PRIMARY SETUP                       |
|---------------------------------------|---------|-------------------------------------|
| Assign G0 label to * character set    | ESC ( * |                                     |
| Assign G1 label to * character set    | ESC ) * |                                     |
| ASCII / N.American                    | B       | Italian                      Y      |
| British                               | A       | Danish / Norwegian      ' or E or 6 |
| Dutch                                 | 4       | Portuguese                %6        |
| Finnish                               | 5 or C  | Spanish                    Z        |
| French                                | R       | Swedish                    7 or H   |
| French Canadian                       | 9 or Q  | Swiss                        =      |
| German                                | K       | Line Drawing              0         |
| Assign G0 labelled set to 7 bit codes | SI      |                                     |
| Assign G1 labelled set to 7 bit codes | SO      |                                     |

## CURSOR

|   | HOST         | PRIMARY SETUP |
|---|--------------|---------------|
| Clear tab stops (0 = cursor position, 2 or 3 = all) | ESC [ * g    |               |
| Deselect auto carriage return                       | ESC [ 20 1   |               |
| Disable cursor                                      | ESC [ ? 50 1 |               |
| Disable cursor autowrap                             | ESC [ ? 7 1  |               |

|  |                 |        |
|--|-----------------|--------|
| Enable cursor                              | ESC [ ? 50 h    |        |
| Enable cursor autowrap                     | ESC [ ? 7 h     |        |
| Index cursor (move down one line)          | ESC D           |        |
| Insert FF character & advance cursor       | FF              |        |
| Line feed                                  | LF              |        |
| Move cursor down * lines                   | ESC [ * B       |        |
| Move cursor down one line                  | VT              |        |
| Move cursor left * columns                 | ESC [ * D       |        |
| Move cursor one column left                | BS              |        |
| Move cursor right * columns                | ESC [ * C       |        |
| Move cursor to beginning of next line      | ESC E           |        |
| Move cursor to left margin of current line | CR              |        |
| Move cursor to line (*l) column (*c)       | ESC [ *l ; *c h |        |
| Move cursor to line (*l) column (*c)       | ESC [ *l ; *c f |        |
| Move cursor to next tab stop               | HT              |        |
| Move cursor up * lines                     | ESC [ * A       |        |
| Reverse index cursor (move up one line)    | ESC M           |        |
| Select absolute origin mode                | ESC [ ? 6 l     |        |
| Select auto carriage return                | ESC [ 20 h      | LFCR * |
| Select relative origin mode                | ESC [ ? 6 h     |        |
| Set tab stop at current cursor position    | ESC H           | TABS * |
| Tab cursor backward * tabs                 | ESC [ * Z       |        |
| Tab cursor forward * tabs                  | ESC [ * I       |        |

## DISPLAY

## HOST

## PRIMARY SETUP

---

|   |                 |  |
|---|-----------------|--|
| Scroll display down * lines                   | ESC [ * T       |  |
| Scroll display up * lines                     | ESC [ * S       |  |
| Select 80 column display mode                 | ESC [ ? 3 l     |  |
| Select 132 column display mode                | ESC [ ? 3 h     |  |
| Select invisible display                      | ESC [ ? 75 l    |  |
| Select normal colour display mode             | ESC [ ? 5 l     |  |
| Select reverse colour display mode            | ESC [ ? 5 h     |  |
| Select visible display                        | ESC [ ? 75 h    |  |
| Set left (*l) and right (*r) margin positions | ESC [ *l ; *r r |  |

## EDITING

## HOST

## PRIMARY SETUP

---

|   |           |  |
|---|-----------|--|
| Delete * characters from cursor position right    | ESC [ * P |  |
| Delete * lines from cursor position down          | ESC [ * M |  |
| Erase * characters & attributes from cursor right | ESC [ * X |  |
| Erase line portion (0 = from, 1 = to, 2 = all)    | ESC [ * K |  |
| Erase screen portion (0 = from, 1 = to, 2 = all)  | ESC [ * J |  |
| Insert * blank lines                              | ESC [ * L |  |
| Insert * space characters                         | ESC [ * @ |  |
| Select insert mode                                | ESC [ 4 h |  |
| Select replace mode                               | ESC [ 4 l |  |

## GENERAL OPERATION

## HOST

## PRIMARY SETUP

---

|  |            |          |
|--|------------|----------|
| Cancel current ESC sequence & display error  | CAN        |          |
| Local echo mode on                           | ESC [ 12 l | ECHO YES |
| Local echo mode off                          | ESC [ 12 h | ECHO NO  |
| Reset features (* = * in ESC [ * h commands) | ESC [ * l  |          |

|  |                  |           |
|--|------------------|-----------|
| Reset terminal emulation   | ESC c            |           |
| Restore saved features   | ESC 8            |           |
| Save features (char. set, attrib's, cursor, origin)  | ESC 7            |           |
| Select terminal emulation mode<br>(Host * 0 = Tek, 1 = ANSI, 2 = Edit, 3 = VT52,<br>5 = VT100N, 6 = VT220N, 7 = VT220M7,<br>8 = VT220M8) | ESC % ! *        | CODE *    |
| Select VT52 mode   | ESC [ ? 2 1      | CODE VT52 |
| Select VT100 mode from VT320 mode  | ESC [ 61 " p     |           |
| Select VT300 7 bit mode  | ESC [ 62 ; 1 " p |           |
| Select VT300 8 bit mode  | ESC [ 62 " p     |           |
| Select VT300 8 bit mode (* can be 0 or 2)  | ESC [ 62 ; * " p |           |
| Set features (* = * in ESC [ * h commands)   | ESC [ * h        |           |
| Soft reset   | ESC [ ! p        |           |
| Sound audible tone   | BEL              |           |

### KEYBOARD

|                                    | HOST        | PRIMARY SETUP |
|------------------------------------|-------------|---------------|
| Disable key autorepeat             | ESC [ ? 8 1 |               |
| Disable keyboard                   | ESC `       |               |
| Disable keyboard input             | ESC [ 2 h   |               |
| Enable key autorepeat              | ESC [ ? 8 h |               |
| Enable keyboard                    | ESC b       |               |
| Enable keyboard input              | ESC [ 2 1   |               |
| Select cursor key application mode | ESC [ ? 1 h |               |
| Select cursor key normal mode      | ESC [ ? 1 1 |               |
| Select keypad application mode     | ESC =       |               |
| Select keypad numeric mode         | ESC >       |               |

### PRINTING

|                      | HOST        | PRIMARY SETUP |
|----------------------|-------------|---------------|
| Auto print off       | ESC [ ? 4 i |               |
| Auto print on        | ESC [ ? 5 i |               |
| Print controller on  | ESC [ 5 i   |               |
| Print controller off | ESC [ 4 i   |               |
| Print cursor line    | ESC [ ? 1 i |               |
| Print page           | ESC [ i     |               |

### REPORTS

|                                | HOST         | PRIMARY SETUP |
|--------------------------------|--------------|---------------|
| Report compatibility level     | ESC [ > c    |               |
| Report cursor position         | ESC [ 6 n    |               |
| Report keyboard nationality    | ESC [ ? 26 n |               |
| Report operating status        | ESC [ 5 n    |               |
| Report terminal emulation mode | ESC # ! 0    |               |
| Report VT terminal identity    | ESC [ 0 c    |               |
| Report VT terminal identity    | ESC [ c      |               |
| Report VT terminal identity    | ESC Z        |               |

## ANSI VT220 Mode

---

When TeemTalk is in VT220 7 or 8 bit mode, the following commands will be executed in addition those listed previously for ANSI VT100 mode.

| CHARACTER ATTRIBUTES                 | HOST        | PRIMARY SETUP |
|--------------------------------------|-------------|---------------|
| Non-erase attribute on               | ESC [ 1 " q |               |
| Non-erase attribute off (* = 0 or 2) | ESC [ * " q |               |

| CHARACTER SET SELECTION                                       | HOST                         | PRIMARY SETUP |
|---|------------------------------|---------------|
| Assign G2 label to * character set<br>(second * is parameter) | ESC **                       |               |
| Assign G3 label to * character set                            | ESC + *                      |               |
| Extre character sets: DEC VT220 Additional                    | <                            |               |
| Tek Additional  | 3                            |               |
| Assign G1 labelled set to 8 bit codes                         | ESC ~                        |               |
| Assign G2 labelled set to 7 bit codes                         | ESC n                        |               |
| Assign G2 labelled set to 7 bit codes for 1 character         | ESC N                        |               |
| Assign G2 labelled set to 8 bit codes                         | ESC }                        |               |
| Assign G3 labelled set to 7 bit codes                         | ESC o                        |               |
| Assign G3 labelled set to 7 bit codes for 1 character         | ESC O                        |               |
| Assign G3 labelled set to 8 bit codes                         | ESC                          |               |
| Clear redefinable character set                               | ESC P 1 ; 1 ; 2 { SP @ ESC \ |               |
| Load redefinable character set                                | ESC P * { * ESC \            |               |
| Select Multinational character set mode                       | ESC [ ? 42 1                 |               |
| Select National character set mode                            | ESC [ ? 42 h                 |               |

| EDITING  | HOST        | PRIMARY SETUP |
|--|-------------|---------------|
| Selective erase line (0 = from, 1 = to, 2 = all)   | ESC [ ? * K |               |
| Selective erase screen (0 = from, 1 = to, 2 = all) | ESC [ ? * J |               |

| GENERAL OPERATION            | HOST     | PRIMARY SETUP |
|------------------------------|----------|---------------|
| Select C1 7 bit control mode | ESC SP F |               |
| Select C1 8 bit control mode | ESC SP G |               |

| PF KEYS           | HOST                      | PRIMARY SETUP |
|-------------------|---------------------------|---------------|
| Clear all PF keys | ESC P 0 ; 1   ESC \       |               |
| Lock PF keys      | ESC P 1 ; 0   ESC \       |               |
| Program a PF key  | ESC P * ; *   * / * ESC \ |               |

## Tek Mode

- ◆ Applies to TeemTalk-11W and TeemTalk-11W32 only.
- Applies to TeemTalk-05W & -05W32, TeemTalk-07W & TeemTalk-07W32.

| COLOUR                                      | HOST      | PRIMARY SETUP   |
|---|-----------|-----------------|
| Assign colour index to P0/P1 plotter pen    | ESC P I * | PMAP *          |
| ● Assign colours to dialog area indices     | ESC T F * | DACMAP *        |
| Assign colours to surface indices           | ESC T G * | CMAP *          |
| ◆ Select background grey shade              | ESC R B * | GREYBACK *      |
| Select background surface colour            | ESC T B * | CBACKGROUND *   |
| Select character cell/dash line gap index   | ESC M B * | BACKINDEX *     |
| Select colour/overlap/grey mode             | ESC T M * | CMODE *         |
| ◆ Select dialog area surface colour map     | ESC L S * | DASURFACE *     |
| ◆ Select dialog area text alternative index | ESC L J * | DA2INDEX *      |
| Select graphics text colour index           | ESC M T * | GTINDEX *       |
| Select line/panel b/m colour index          | ESC M L * | LINEINDEX *     |
| Select smoothness of curve                  | ESC U G * | CSMOOTH *       |
| ◆ Select surface indices grey shades        | ESC R G * | GREYCMAP *      |
| Set pixels in rectangle to identical colour | ESC R R * | PXRECTANGLE *   |
| Specify alpha cursor colour indices         | ESC T D * | ACURSOR *       |
| Specify dialog area colour indices          | ESC L I * | DAINDEX *       |
| Specify index monochrome printing           | ESC Q I * | HCMAP *         |
| Specify pixel colour indices                | ESC R P * | PXRASTERWRITE * |

| DIALOG AREA                                 | HOST      | PRIMARY SETUP     |
|---|-----------|-------------------|
| ◆ Delete specified dialog area              | ESC K K * | DELDAREA *        |
| Enable dialog area                          | ESC K A * | DAENABLE *        |
| Enable dialog area display                  | ESC L V * | DAVISIBILITY *    |
| Erase dialog area buffer                    | ESC L Z   | CLEARDIALOG       |
| Set dialog area hardcopy attributes         | ESC Q L * | HCDAAATTRIBUTES * |
| ◆ Specify dialog area maximum line length   | ESC L C * | DACHARS *         |
| ◆ Specify dialog area position              | ESC L X * | DAPOSITION *      |
| Specify no. of visible lines in dialog area | ESC L L * | DALINES *         |
| Specify size of dialog area buffer          | ESC L B * | DABUFFER *        |

| GENERAL                                   | HOST      | PRIMARY SETUP |
|---|-----------|---------------|
| Activate screen dim                       | ESC K G * | DIM *         |
| Backspace                                 | BS        |               |
| Cancel current ESC seq. & display error   | CAN       |               |
| Cancel operation & reset                  | ESC K C   | CANCEL        |
| Carriage return                           | CR        |               |
| Display command & param. current values   |           | STATUS        |
| Display command information               |           | HELP          |
| Display decoded value of encoded param.   |           | DECODE *      |
| Display encoded value of host com. param. |           | ENCODE *      |
| Enable port to port communications        | ESC P C * | PCOPY *       |
| ◆ End spooling                            | ESC J E   | STOPPOOL      |
| End write command file to disk            | ESC A X   |               |

|  |           |                   |
|--|-----------|-------------------|
| Enter Alpha mode   | US        |                   |
| Enter Marker mode  | FS        |                   |
| Enter Vector mode  | GS        |                   |
| Exit TeemTalk to DOS   | ESC A E   |                   |
| Insert FF & advance cursor   | FF        |                   |
| Line feed  | LF        |                   |
| Lock keyboard  | ESC K L * |                   |
| Lock viewing keys for zoom/pan   | ESC R J * | LOCKVIEWINGKEYS * |
| Read command file from disk  | ESC A R * |                   |
| Reset TeemTalk   | ESC K V   | RESET             |
| Run a program  | ESC A S * |                   |
| Save parameters  | ESC J V * | SAVE *            |
| Save parameters in non-volatile file   | ESC K U   | NVSAVE            |
| ◆ Select 4107 or 4111 emulation  |           | TEKMODE *         |
| Select auto carriage return  | ESC K F * | LFCR *            |
| Select auto line feed  | ESC K R * | CRLF *            |
| Select code for SYN  |           | SYNISESC *        |
| Select continuous/intermittent bell tone   |           | BELLTYPE *        |
| Select control code action or display  | ESC K S * | SNOOPY *          |
| Select error message display level   | ESC K T * | ERRORLEVEL *      |
| Select factory default parameters  |           | FACTORY           |
| Select local or online mode  |           | LOCAL *           |
| ◆ Select response to full page   | ESC K P * | PAGEFULL *        |
| Select terminal emulation mode   | ESC % ! * | CODE *            |
| (Host * 0 = Tek, 1 = ANSI, 2 = Edit, 3 = VT52,<br>5 = VT100N, 6 = VT220N, 7 = VT220M7,<br>8 = VT220M8) |           |                   |
| Select text editing characters   | ESC K Z * | EDITCHARS *       |
| Send print data to file  | ESC A U * |                   |
| Set tab stop positions   | ESC K B * | TABS *            |
| Sound audible tone   | BEL       |                   |
| ◆ Specify command source   | ESC J L * | LOAD *            |
| ◆ Specify spooling path  | ESC J S * | SPOOL *           |
| Tab to next tab stop   | HT        |                   |
| Vertical tab (i.e. line feed)  | VT        |                   |
| Write command file to disk   | ESC A W * |                   |

**GIN**

**HOST**

**PRIMARY SETUP**

---

|  |           |                   |
|--|-----------|-------------------|
| Define GIN window                          | ESC I W * | GINWINDOW *       |
| Define tablet GIN area                     | ESC I V * | GINAREA *         |
| Disable GIN mode                           | ESC I D * | GINDISABLE *      |
| Enable 4010 GIN mode                       | ESC SUB   |                   |
| ◆ Enable/disable 4953 tablet GIN mode      | ESC ! *   |                   |
| Enable GIN                                 | ESC I E * | GINENABLE *       |
| Enable GIN gridding & specify grid spacing | ESC I G * | GINGRIDDING *     |
| Enable GIN inking                          | ESC I I * | GININKING *       |
| Enable rubberbanding                       | ESC I R * | GINRUBBERBAND *   |
| Enable tablet & keys                       | ESC K J * | MOUSEMAP *        |
| Select format of GIN reports               | ESC I K * | GINREPORT *       |
| Select GIN cursor speed                    | ESC I J * | GSPEED *          |
| Select GIN ink/rubberband start points     | ESC I X * | GINSTARTPOINT *   |
| Select GIN pick aperture size              | ESC I A * | GINPICKAPERTURE * |

|  |           |                  |
|--|-----------|------------------|
| Select segment for GIN cursor            | ESC I C * | GINCURSOR *      |
| ◆ Select tablet area                     | ESC I N * | TBSIZE *         |
| Set GIN stroke report frequency          | ESC I F * | GINFILTERING *   |
| Specify GIN cursor movement              | ESC I U * | GINRATES *       |
| Specify GIN key characters               | ESC I Z * | GINTABCHARS *    |
| Specify GIN stroke report key characters | ESC I H * | GINHEADERCHARS * |
| Specify tablet type                      | ESC I B * |                  |

### GRAPHICS ALPHA TEXT

#### HOST

#### PRIMARY SETUP

|  |           |          |
|--|-----------|----------|
| Select alpha text font (G0)            | ESC SI    |          |
| Select alpha text font (G1)            | ESC SO    |          |
| Select underline mode                  | ESC L M * | DAMODE * |
| Specify 4014 alpha text size (128 cpl) | ESC ;     |          |
| Specify 4014 alpha text size (128 cpl) | ESC :     |          |
| Specify 4014 alpha text size (80 cpl)  | ESC 8     |          |
| Specify 4014 alpha text size (80 cpl)  | ESC 9     |          |

### GRAPHICS PRIMITIVES

#### HOST

#### PRIMARY SETUP

|                                      |           |               |
|--------------------------------------|-----------|---------------|
| Change graphics position             | ESC L F * | MOVE *        |
| Define line style                    | ESC M X * | LSDEFINE *    |
| Draw curve                           | ESC U C * | CURVE *       |
| Draw marker                          | ESC L H * | MARKER *      |
| Draw vector                          | ESC L G * | DRAW *        |
| End panel definition                 | ESC L E   | ENDPANEL      |
| ◆ Fill rectangle                     | ESC U R * | RECTANGLE *   |
| Finish fill pattern definition       | ESC M E   | ENDFILLP      |
| Select marker style                  | ESC M M * | MARKTYPE *    |
| Select panel fill pattern            | ESC M P * | FILLPATTERN * |
| Select panel filling features        | ESC M S * | PFILLMODE *   |
| ◆ Select pixel rectangle features    | ESC R T * | PXFACTORS *   |
| ◆ Select rectangle drawing boundary  | ESC U B * | BOUNDMODE *   |
| Specify 4014 line style (* = ` to o) | ESC *     |               |
| Specify style of line/panel boundary | ESC M V * | LINESTYLE *   |
| Start fill pattern definition        | ESC M D * | BEGINFILLP *  |
| Start panel definition               | ESC L P * | BEGINPANEL *  |

### GRAPHICS SURFACES

#### HOST

#### PRIMARY SETUP

|  |           |                |
|--|-----------|----------------|
| Erase graphics area                          | ESC FF    |                |
| Select current view surf./erase/border index | ESC R A * | VATTRIBUTES *  |
| Select surface visibility                    | ESC R I * | SVISIBILITY *  |
| Specify number of surfaces & bit planes      | ESC R D * | SDEFINITIONS * |
| Specify surface priority level               | ESC R N * | SPRIORITIES *  |

### GRAPHICS TEXT

#### HOST

#### PRIMARY SETUP

|   |           |            |
|---|-----------|------------|
| Begin graphics text character definition  | ESC S T * | GTBEGIN *  |
| Define graphics text font grid dimensions | ESC S G * | GTGRID *   |
| Delete user defined character from font   | ESC S Z * | GTDELETE * |
| Display graphics text                     | ESC L T * | GTEXT *    |
| End graphics text character definition    | ESC S U   | GTEND      |
| Graphics area replace/overstrike          | ESC M G * | GAMODE *   |

Select font for stroke precision  
 Select graphics text control precision  
 Select graphics text slant angle  
 Select size of graphics text  
 Specify graphics text string rotation angle  
 Specify graphics text writing direction

ESC M F \*      GTFONT \*  
 ESC M Q \*      GTPRECISION \*  
 ESC M A \*      GTSLANT \*  
 ESC M C \*      GTSIZE \*  
 ESC M R \*      GTROTATION \*  
 ESC M N \*      GTPATH \*

## HOST COMMUNICATIONS

Direct host data to specified port  
 Ignore delete code  
 Select bypass mode  
 Select end of line characters  
 Select line parity type  
 Select local echo  
 Select prompt mode  
 Set input queue size  
 Set line baud rate limit  
 Set line TX & RX baud rate  
 Set stop bits  
 Specify break key interrupt duration  
 Specify end of file characters  
 Specify end of line delay  
 Specify end of line string transfer freq.  
 Specify line flow control type  
 Specify prompt mode prompt string  
 Specify report termination characters

| HOST      | PRIMARY SETUP  |
|-----------|----------------|
| ESC J C * | COPY HO: TO *  |
| ESC K I * | IGNOREDEL *    |
| ESC CAN   |                |
| ESC N C * | EOMCHARS *     |
| ESC N P * | PARITY *       |
| ESC K E * | ECHO *         |
| ESC N M * | PROMPTMODE *   |
| ESC N Q * | QUEUE SIZE *   |
| ESC N L * | XMTLIMIT *     |
| ESC N R * | BAUDRATE *     |
| ESC N B * | STOPBITS *     |
| ESC N K * | BREAKTIME *    |
| ESC N E * | EOFSTRING *    |
| ESC N D * | XMTDELAY *     |
| ESC I M * | REOM *         |
| ESC N F * | FLAGGING *     |
| ESC N S * | PROMPTSTRING * |
| ESC N T * | EOLSTRING *    |

## P0/P1 PORT

Assign protocol to P0/P1 port  
 Select hardcopy features  
 ◆ Select hardcopy image width  
 Select P0/P1 positive/neg. hardcopy  
 Specify number of P0/P1 port hardcopies  
 Specify P0/P1 port baud rate  
 Specify P0/P1 port data & stop bits  
 Specify P0/P1 port end of file string  
 Specify P0/P1 port flow control  
 Specify P0/P1 port h/c image orientation  
 Specify P0/P1 port parity  
 Specify printer type  
 Specify size of colour hardcopy  
 Transmit current view visible segs to port

| HOST      | PRIMARY SETUP |
|-----------|---------------|
| ESC P A * | PASSIGN *     |
| ESC Q X * | HCFEATURES *  |
| ESC Q F * | HCFORMWIDTH * |
| ESC P J * | PINVERSION *  |
| ESC P N * | PCOPIES *     |
| ESC P R * | PBAUD *       |
| ESC P B * | PBITS *       |
| ESC P E * | PEOF *        |
| ESC P F * | PFLAG *       |
| ESC P O * | PORIENT *     |
| ESC P P * | PPARITY *     |
| ESC Q D * | HCINTERFACE * |
| ESC Q A * | HCSIZE *      |
| ESC P L * | PLOT TO *     |

## PARALLEL PORT

Copy screen to parallel printer port  
 Copy to parallel printer port  
 Select CR or CRLF for mono printer  
 ◆ Select colour copier control  
 ◆ Select dithered pattern for hardcopy  
 ◆ Select hardcopy image width

| HOST      | PRIMARY SETUP  |
|-----------|----------------|
| ESC ETB   |                |
| ESC K H * |                |
| ESC Q E * | HCMONochrome * |
| ESC Q R * | HCRESERVE *    |
| ESC Q M * | HCDITHER *     |
| ESC Q F * | HCFORMWIDTH *  |

|                                   |           |               |
|-----------------------------------|-----------|---------------|
| ◆ Select port hardcopy quantity   | ESC Q N * | HCCOPIES *    |
| ◆ Select response to full page    | ESC K P * | PAGEFULL *    |
| Send print data to file           | ESC A U * |               |
| Set image orientation of hardcopy | ESC Q O * | HCORIENT *    |
| Specify colour resolution of data | ESC Q B * | HCDATARES *   |
| Specify density of hardcopy       | ESC Q U * | HCDENSITY *   |
| Specify hardcopy repaint number   | ESC Q T * | HCREPAINT *   |
| Specify printer type              | ESC Q D * | HCINTERFACE * |
| Specify size of colour hardcopy   | ESC Q A * | HCSIZE *      |

**PIXEL COMMANDS**

|   | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|---|-------------|----------------------|
| Begin pixel operations                      | ESC R U *   | PXBEGIN *            |
| Copy pixels from current to specified surf. | ESC R X *   | PXCOPY *             |
| Read pixel file from disk                   | ESC A P *   |                      |
| Redisplay saved pixel data                  | ESC U K *   | PIXRESTORE *         |
| Save pixel bit plane memory to main mem.    | ESC U J *   | PIXSAVE *            |
| Set pixel beam position                     | ESC R H *   | PXPOSITION *         |
| Set pixel viewport size                     | ESC R S *   | PXVIEWPORT *         |
| Specify raster memory colour indices        | ESC R L *   | PXRUNLENGTHWRITE *   |
| Write pixel file to disk                    | ESC A O *   |                      |

**PROGRAMMED STRINGS**

|   | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|---|-------------|----------------------|
| Define key programmed string (volatile) |             | LEARN                |
| Define key programmed string (non-vol)  |             | NVLEARN              |
| Define programmed string (volatile)     | ESC K D *   | DEFINE *             |
| Define programmed string (non-vol)      | ESC K O *   | NVDEFINE *           |
| Display programmed string               |             | MACROSTATUS *        |
| Enable programmed key strings           | ESC K W *   | KEYEXPAND *          |
| Select key string local/host character  | ESC K Y *   | KEYEXCHAR *          |
| Transmit programmed string              | ESC K X *   | EXPAND *             |

**REPORTS**

|   | <b>HOST</b> | <b>PRIMARY SETUP</b> |
|---|-------------|----------------------|
| Assign report intro/termination chars.    | ESC I S *   | RSIGCHARS *          |
| ◆ Enable TeemTalk status byte             | ESC I T *   | TBSTATUS *           |
| Select bypass mode cancellation character | ESC N U *   | BYPASSCANCEL *       |
| Send 4010 status report                   | ESC ENQ     |                      |
| ◆ Send colour hardcopy status report      | ESC Q Q     | HCREPORT             |
| Send device status report                 | ESC J Q *   |                      |
| Send error report                         | ESC K Q     |                      |
| Send GIN position report                  | ESC I P *   |                      |
| Send port status report                   | ESC P Q *   |                      |
| Send segment status report                | ESC S Q *   |                      |
| Send emulation mode report                | ESC # ! 0   |                      |
| Send emulation settings report            | ESC I Q *   | SETTINGS *           |
| Set report maximum line length            | ESC I L *   | RLINELENGTH *        |
| Specify version number                    |             | TERMINAL *           |
| Specify XY coords & integer report format | ESC U X *   | COORDINATEMODE *     |

## SEGMENTS

|  | HOST      | PRIMARY SETUP     |
|--|-----------|-------------------|
| Add primitives to segment                  | ESC U I * | SGINSERT *        |
| Assign pick ID nos. to graphics primitives | ESC M I * | SGPICKID *        |
| Assign segment to class                    | ESC S A * | SGCLASS *         |
| Call segment as subroutine                 | ESC S F * | SGCALL *          |
| Copy segment into current segment def.     | ESC L K * | SGINCLUDE *       |
| Delete pick groups from segment            | ESC U E * | SGREPLACE *       |
| Delete segment                             | ESC S K * | SGDELETE *        |
| Delete segment part                        | ESC U D * | SGREMOVE *        |
| Enable segment visibility                  | ESC S V * | SGVISIBILITY *    |
| End definition of segment                  | ESC S C   | SGCLOSE           |
| End segment & start higher segment def.    | ESC S N   | SGUP              |
| End segment & start lower segment def.     | ESC S B   | SGDOWN            |
| End segment & start new segment            | ESC S E * | SGNEW *           |
| Renumber segment                           | ESC S R * | SGRENAME *        |
| Select segment detectability for GIN pick  | ESC S D * | SGDETECT *        |
| Select segment magnification or rotation   | ESC S J * | SGSCALE *         |
| Select segment drawing mode                | ESC S M * | SGMODE *          |
| Select segment edit mode                   | ESC U H * | SGEDIT *          |
| Select segment flashing                    | ESC S H * | SGHIGHLIGHT *     |
| Set segment display & GIN pick priority    | ESC S S * | SGPRIORITY *      |
| Specify operation classes                  | ESC S L * | SGMATCHINGCLASS * |
| Specify pivot point                        | ESC S P * | SGPIVOT *         |
| Specify segment mag. rotation & position   | ESC S I * | SGTRANSFORM *     |
| Specify segment position                   | ESC S X * | SGPOSITION *      |
| Start definition of segment                | ESC S O * | SGOPEN *          |

## VIEWS, VIEWPORTS & WINDOWS

|   | HOST      | PRIMARY SETUP |
|---|-----------|---------------|
| Delete specified view                   | ESC R K * | VDELETE *     |
| Erase view & redraw visible segments    | ESC K N * | RENEW *       |
| Select current view                     | ESC R C * | VSELECT *     |
| ◆ Select overview full/part window size | ESC U W * | OWINDOW *     |
| Select screen update level              | ESC R F * | FIXUP *       |
| Select viewport border visibility       | ESC R E * | BORDER *      |
| Specify current view window boundary    | ESC R W * | WINDOW *      |
| Specify viewport position               | ESC R V * | VIEWPORT *    |
| Specify views in view group             | ESC R Q * | VCLUSTER *    |

## W3220 Mode

### GENERAL OPERATION

|  | HOST    | PRIMARY SETUP |
|--|---------|---------------|
| Disable local echo                     | ESC N   |               |
| Enable local echo                      | ESC M   |               |
| Select bypass mode                     | ESC CAN |               |
| Transfer data between aux & host ports | ESC X   |               |
| Transfer data from aux to host port    | ESC L   |               |

### GIN MODE

|  | HOST                  | PRIMARY SETUP |
|--|-----------------------|---------------|
| Define polygon & enable polygon dragging | ESC   R D * ESC   R E |               |
| Enable line dragging                     | ESC   R A             |               |
| Request cursor position report           | ESC ENQ               |               |
| Select GIN cursor position               | ESC   R @             |               |
| Terminate dragging                       | ESC   R F             |               |

### GRAPHICS TEXT

|   | HOST      | PRIMARY SETUP |
|---|-----------|---------------|
| Move graphics text cursor down  | LF        |               |
| Move graphics text cursor left  | BS        |               |
| Move graphics text cursor right   | HT        |               |
| Move graphics text cursor up  | VT        |               |
| Select graphics text size - 128 cols, 52 lines, 8x15  | ESC 8     |               |
| Select graphics text size - 128 cols, 52 lines, 8x15  | ESC 9     |               |
| Select graphics text size - 128 cols, 52 lines, 8x15  | ESC =     |               |
| Select graphics text size - 204 cols, 98 lines, 5x8   | ESC :     |               |
| Select graphics text size - 204 cols, 98 lines, 5x8   | ESC ;     |               |
| Select graphics text size - 204 cols, 98 lines, 5x8   | ESC <     |               |
| Select graphics text size - 204 cols, 98 lines, 5x8   | ESC >     |               |
| Select orientation of graphics text (@ = Normal, A = Upwards, B = Backwards, C = Downwards) | ESC   O * |               |
| Text magnification level (@ = 1, A = 2, B = 3)  | ESC   E * |               |

### MODE SELECTION

|  | HOST    | PRIMARY SETUP |
|--|---------|---------------|
| Deselect GIN & enter graphics text mode        | CR      |               |
| Deselect GIN & enter graphics text mode        | ESC FF  |               |
| Deselect point plot & enter graphics text mode | CR      |               |
| Deselect point plot & enter graphics text mode | ESC FF  |               |
| Deselect point plot & enter graphics text mode | US      |               |
| Deselect vector mode & enter graphics text     | CR      |               |
| Deselect vector mode & enter graphics text     | ESC FF  |               |
| Deselect vector mode & enter graphics text     | US      |               |
| Select alpha mode                              | ESC 2   |               |
| Select alpha mode & erase alpha memory         | ESC EOT |               |
| Select GIN mode                                | ESC SUB |               |
| Select graphics text & erase graphics memory   | ESC FF  |               |
| Select graphics text mode                      | ESC 1   |               |
| Select point plot mode                         | FS      |               |

|  |           |        |
|--|-----------|--------|
| Select terminal emulation mode<br>(Host * 0 = Tek, 1 = ANSI, 2 = Edit, 3 = VT52,<br>5 = VT100N, 6 = VT220N, 7 = VT220M7,<br>8 = VT220M8) | ESC % ! * | CODE * |
|--|-----------|--------|

### **POINT PLOT MODE**

| <b>HOST</b> | <b>PRIMARY SETUP</b> |
|-------------|----------------------|
|-------------|----------------------|

|                    |           |
|--------------------|-----------|
| Select marker type | ESC   M * |
|--------------------|-----------|

### **SURFACES & COLOURS**

| <b>HOST</b> | <b>PRIMARY SETUP</b> |
|-------------|----------------------|
|-------------|----------------------|

|   |           |
|---|-----------|
| Assign colour to overlay/alternate set index      | ESC   F * |
| Assign colour to overlay/principal set index      | ESC   M * |
| Assign colour to overlay/principal/alt. set index | ESC   L * |
| Overwrite alternative colour index set            | ESC   N * |
| Protect surfaces                                  | ESC   W * |
| Select colour set & surface visibility            | ESC   D * |
| Select combined surface & writing colour index    | ESC   C * |
| Select overlaid surface & display priority        | ESC   P * |
| Select overlaid surface & writing surface         | ESC   O * |

### **VECTOR MODE**

| <b>HOST</b> | <b>PRIMARY SETUP</b> |
|-------------|----------------------|
|-------------|----------------------|

|  |           |
|--|-----------|
| Activate area fill                         | ESC   F * |
| Define fill pattern                        | ESC   P * |
| Define line style                          | ESC   L * |
| Define line style                          | ESC ACK   |
| Deselect block fill                        | ESC ETX   |
| Deselect write-through & selective erase   | ESC SOH   |
| Enable selective erase                     | ESC DLE   |
| Enable write-through mode                  | ESC NAK   |
| Generate arc or circle                     | ESC   A Q |
| Select block fill                          | ESC STX   |
| Select fill pattern                        | ESC   P * |
| Select line thickness                      | ESC   K * |
| Select vector mode                         | GS        |
| Specify line style (* = a through w and `) | ESC *     |

---

## TeemTalk Additional Commands

---

### MOUSE REPORTING IN ALPHANUMERIC APPLICATIONS

---

Arm TeemTalk for mouse operation                      ESC [= \*arg g

where \*arg is of the format:    bit 7 - 3    0 0 1 1 0  
    bit 2            when set enables motion events  
    bit 1            when set enables button release events  
    bit 0            when set enables button press events

If all bits are cleared then any outstanding arming request is cancelled. The mouse remains armed until cancelled. When any of the selected events occur, the following report format is sent to the host:

ESC [= <Event Type> ; <Button Status> ; <Column> ; <Row> r

Where: <Event Type> is the event(s) that caused the report in the same format as the arming sequence.

<Button Status> is of the format: 00110LMR

where LMR indicates which button caused the event.

<Column> and <Row> are the alphanumeric position of the mouse.

### MOUSE CURSOR

---

Mouse cursor style (see table in *Initialization Commands*)    ESC [= 2 ; \* p

### DISPLAY

---

Number of screen lines (window resizes accordingly)    ESC [= 1 ; \* p

### SCRIPT FILE

---

Initiate script file (filename can include options)    ESC P 2 z filename ESC \

### LOG HOST FILE

---

Log host file (\*f = 0 create new file, 1 append file,    ESC P \*f z \*n ; \*d ESC \  
 \*n = filename, \*d = host data to write to file)

### REPORTS

---

Report application name & version (in DEC VT modes)    ESC [ 0 ; 1234 c  
 Example report format: tt07w - 3.2.1

*Notes*

---

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---

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